

FLIGHT

&
THE AIRCRAFT ENGINEER.

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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EDITORIAL COMMENT



ACCORDING to an answer given by Gen. Seely in the House the other day, negotiations are going on between the Admiralty and the Air Ministry for the transfer of responsibility for airship construction to the latter. Apparently, no conclusion has yet been reached, but from the tenor of the Under-Secretary's answer it seems fairly clear that this transfer will shortly be consummated.

The Future of Airships We are very much of opinion that this is the right course to be taken. The airship undoubtedly has a great commercial value, which is likely to increase enormously as time goes on, and, as it is the Air Ministry and not the Admiralty which is concerned with the future of commercial aviation, it seems clear that it should be responsible for airship construction. Nor is the case

different when we come to consider the problems of airship construction in preparation for and in time of war. The Air Ministry is responsible for the raising, training and equipment of the number of aeroplane squadrons required by the Army and for the seaplane formations needed by the Navy and the coast defences. The Army or the Navy, as the case may be, states its needs in this direction, and it is up to the Air Ministry to provide for them—or to explain its default in case of failure. Logically, it seems to follow that the same rule should apply in the case of the airship service. Either the Air Ministry is responsible for the completeness of our aerial defences or it is not. If it is, then its responsibility must extend to the whole of those defences. If, on the other hand, it is not, then it should by all the rules of logic, relinquish all responsibility for the heavier-than-air services of the nation.

However, it is not so much on military grounds as on civil that we desire to see the change consummated. As we have said, the airship has vast potentialities for commercial usefulness. It is almost beyond a doubt that the future—the immediate future, at least—of long-distance, overseas aviation will lie more with the airship, with its better air-keeping qualities and longer radius of action than with the faster but more limited aeroplane. During the War the development of the airship has lain entirely with the Navy, and even since the Air Services were co-ordinated under the Air Ministry the airship branch of the Service has been under the almost complete control of the Admiralty. The natural consequence is that the Admiralty has a monopoly of knowledge of these lighter-than-air craft, and it is an open secret that it has kept that knowledge very much to itself, even since the conclusion of the Armistice rendered it no longer necessary to preserve everything as a close secret.

The time has come when private aviation—or call it commercial aviation, if the term be preferred—should benefit by the knowledge gained during the War. In this connection it is necessary, for the benefit of some who appear to take the conservative official view that nothing learned by the Services has anything to do with the public at large, to point out in asking that this knowledge should be placed at the public disposal that it is this same public which has paid the bill. When the change over, which is

the present subject of discussion, has been effected, we have no doubt that knowledge will be placed at the disposal of constructors and others who will be charged with the active part of development of commercial aviation and that we shall go ahead much faster than as though the airships remained an Admiralty monopoly. We yield to none in our admiration of the way the Admiralty conducts the business of war, but it is still perfectly true that the sea service breeds a sort of conservatism which, to say the least, makes the Admiralty a bad partner in the development of commercial enterprise. The Air Ministry on the other hand is a new institution, which is unfettered by traditions and is withal a partly civilian department whose principal care now is to foster the commercial side of aviation. Therefore, let it assume responsibility for *all* aeronautics and not merely for a part.

Fiat Lux

But, for the good of airship development, when the Air Ministry do take hold of this side of aeronautics, there is one system we should like to see relaxed speedily, that is the overdone silence of dignity which has so long prevailed. By way of instance, the sheaves of unofficial dates and information as to the contemplated voyage of our big dirigibles across the Atlantic, so industriously elaborated by the daily press and others, much upon the same lines as their handling of the supposed doings at Newfoundland of the aeroplane entrants, is really creating serious doubt in the mind of the public as to there being any possibilities in airships at all. No doubt the intention is exactly the opposite, the idea being to popularise the airship by constant reference to its work day by day. But the continual report of dates of starting, qualified later by excuses and delays must have a most harmful effect upon the belief in lighter-than-air craft by the public. Once the seeds of doubt have thus been sown, it will be a stupendous task to undo the mischief innocently created by these constant suggestions of inefficiency. As a fact, we believe there have been no postponements at all, as the date about when a start has been officially contemplated has not yet arrived. What we would like to see is some sort of official pronouncement as to the hundred and one guesses which have been spread broadcast, being entirely unauthorised, and that the plans as originally provided for will, irrespective of other happenings, be duly executed, when results far removed from failure may be safely anticipated. Official reticence under proper circumstances is to be respected, but there are other times and circumstances when well-meant but ill-judged and incorrect statements should be instantly negatived before there is time for their ill-effects to get home.

**A
Proper
Attitude
of
Caution**

The stringent orders issued by the Air Ministry in connection with the ceremony of trooping the colours on His Majesty's birthday and the prohibition of flying over the Epsom course on Derby Day, while they may have offended a few high-spirited stunt pilots anxious to display their skill to great concourses of the public, were absolutely right from the point of view of the general public. It scarcely needs to be pointed out that a bad crash over a crowded area like Epsom

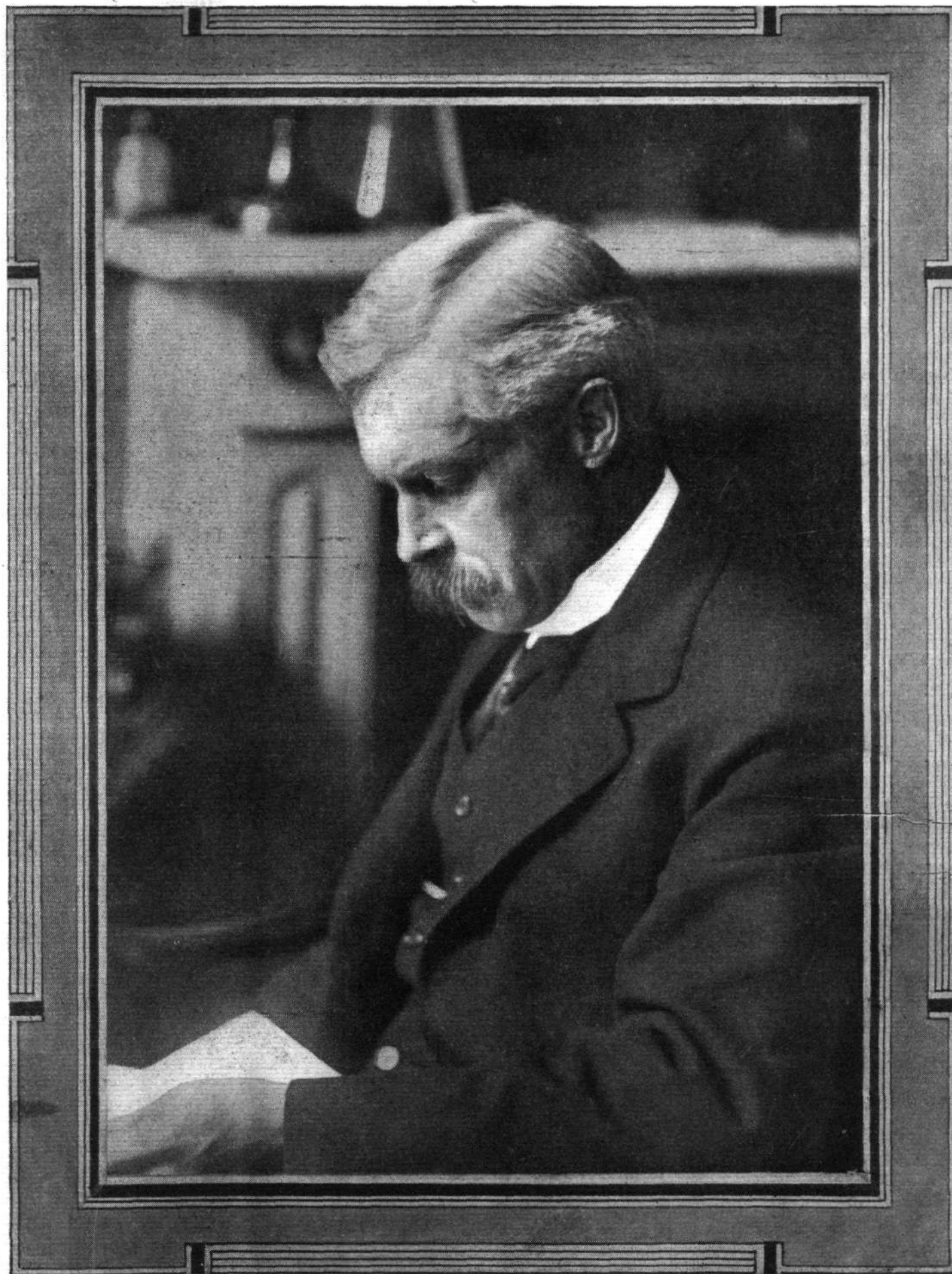
Downs on the day of the Derby might easily have been attended by very serious loss of life and might just as easily have produced a public outcry which would have led to severe restrictions being placed on private flying. Even another exhibition like that of the day of the march of the Australians through London would have led to bitter complaints on the part of the public. It is just as well, therefore, that the Air Ministry should pursue a policy of caution. We had rather see an error made on the side of undue restriction for the time being than that improper laxity should be displayed, culminating in all probability in a series of disasters which would give a severe check to the progress of aviation. We sincerely trust the Ministry will persevere in its policy of keeping down the practice of stunting over crowded areas, not only on "full dress" days but on every occasion. The safety of the public and even of the aviators themselves must come before the passing glory to be gathered by daring pilots who delight to "put the wind up" the assembled public.

**Derbyshire
Oil**

Since we wrote last week on the subject of the discovery of oil in Derbyshire, all the news that has come through regarding the "strike" tends to show that the prospects are exceedingly hopeful for the development of a paying oil industry. How far those prospects will be ultimately justified it is too early to prophesy, but this much can be said: that the already ascertained facts all point the one way. The samples of oil which have been analysed prove that the deposits, whatever the size of these may be, are of exceedingly good quality. The crude oil contains a fair proportion of the lighter spirits and, provided all the hopes of the experts are not falsified, there are all the potentialities of a substantial advance towards the solution of the problems of home produced fuel. Should these hopes turn out to be justified, it hardly needs to be pointed out that the effect on the future of aviation in these islands must be profoundly influenced at least for some years to come. No-one can foretell the life of an oil-field. It may be anything from an hour to a dozen years or more, and we cannot say yet, or for some time to come, what the possibilities of the field which has now been proved to exist in England may be.

But while it will not do to be unduly optimistic in the matter, it should be pointed out that the "strike" is no casual one. The oil was struck exactly where the experts on Lord Cowdray's staff foretold it would be. They are equally satisfied that oil will be found on the scene of other experimental bore-holes which are being sunk, but which have not yet reached the depth of the one at Hardstoft. Therefore, we are justified in the anticipation that the field is a fairly extensive one, which should be of material assistance in connection with our oil fuel problems. Further than this, the experts are convinced that this is not the only oil-bearing district in the country. A few months ago their opinions would have been received with some little scepticism, but having proved themselves to be in the right on this first occasion, there seems to be no reason for doubting that they may be equally right regarding other areas which it is proposed ultimately to prospect. Still, it is early yet to indulge in prophecy or speculation. The Hardstoft boring will be proved in a few more days, and we shall then know a great deal more about the possibilities.

Flight—And the Men



“Flight” Copyright.

Mr. J. D. SIDDELEY, C.B.E., Managing-Director of the Siddeley-Deasy Motor Car Company

The Industrial League

Scarcely a day goes by without witnessing the foundation of some new league or federation, designed to bring the millennium closer. Some of these bodies have a distinctly useful purpose. Others have no discernible *raison d'être* save possibly the glorification of their founders or the creation of quiet jobs for the few at the expense of the credulous many. A recently formed body, the Industrial League, certainly falls within the first category. Indeed, to say that it merely has a useful purpose is to fall very far short of the fact. Under the presidency of the Rt. Hon. G. H. Roberts, M.P., with whom are associated a number of representative men belonging to all shades of industrial opinion, its primary purpose is to bring together the employer and the employed for the discussion of industrial problems in order that each may be assured a better understanding of the other's point of view. To this end a series of conventions is to be held, the first of which is to take place in Birmingham in mid-August.

To our way of thinking, it is impossible to overrate the importance of the task to which the League has set its hand. Unfortunately, it cannot be claimed by the most optimistic that the industrial outlook is a good one. People's nerves have been strained almost to breaking point by nearly five years of unexampled war. Everyone has been working at high tension—most of us have been doing at least the work of two for a period which seems more like twenty years than four. Now that the strain has been removed the inevitable reaction has come and everyone is suffering from "nerves." One of the first consequences is that workers are inclined to slack. They have been used to high wages during the war—for which they gave high output—and they are inclined now to demand the same wages for a moiety of the work. It is no use mincing matters. These are facts which have to be faced. On the other side there may be faults. There is an undoubted disposition among some classes of employers to regard the pound sterling as being worth twenty shillings in purchasing power when they are paying, though when it comes to receiving they have a truer outlook on values.

It is perfectly clear that if we are to maintain our position in the world of trade we must seek for a solution of these difficulties and that that solution will be found to lie somewhere between the two extremes of thought of which we have spoken. But we cannot afford to lose the time that would be occupied in the old methods of negotiation between employer and employed which sufficed well enough in the days of comparative leisure before the War. There must be some quicker method of adjusting differences when they occur, or preferably of anticipating prob-

able causes of difference so that prevention may be applied in place of cure after the event. No better method of so avoiding differences could, we think, be devised than this Industrial League in the councils of which both sides will meet on common ground with the single object of discovering how our industrial problems can be settled without dispute and recourse to strikes and upheavals. We are most strongly of opinion that it is the duty of every employer of labour, large or small, to associate himself with the League and its objects. No less is it the duty of every leader and organiser of labour, as well as every thinking worker, also to join hands with those who are sincerely striving to ensure an era of industrial peace and concord.

• • •

Aeroplanes for the Dominions

Answering a question in the House last week, General Seely said he was glad to be able to announce that His Majesty's Government has approved the proposal of the Air Council that a free gift of aeroplanes should be made to each Dominion and to India, and that corresponding action should be taken in the case of any Colonial Government or Protectorate requiring machines. The object, he said, is to assist the Dominions, India, the Colonies, and Protectorates in the establishment of Air Forces, and thereby develop the proper defences of the Empire by air.

This action seems to be excellently conceived and well timed. As yet none of the Dominions or the Colonies have established aircraft factories of their own on any considerable scale, with the exception of Canada, where a very large number of machines were built during the War to the order of the Imperial Government. Obviously it would be difficult to constitute their air defences out of their own resources for construction, inasmuch as such resources are as yet practically non-existent. They must, in the meantime, draw from the Mother Country the machines and equipment necessary to give them a sufficient start, and the Government has done, we think, a proper and a graceful act in allotting sufficient machines to the Dominions and Colonies without asking for payment. For one thing it may be regarded as some small—very small—recognition of the ready manner in which the British peoples beyond the seas rushed to the assistance of the Motherland at the beginning of the War. It further consolidates the bonds between the Air Services of Britain and the overseas Dominions, and draws a closer link between them than would perhaps have been possible had our own Government not shown such readiness to bear a share in constituting those Services which will, in the future, we trust, be found banded together into a real Empire Air Force.

□ □ □ □

Great Britain and the Liberty Engine

In its first adjustment of war claims the American Liquidation Commission has made a complete settlement of all claims between the United States and Great Britain arising out of military operations. As a final adjustment, Great Britain has to pay the U.S. \$35,500,000. It was estimated that Great Britain should pay 11 per cent. of the total cost of producing the Liberty engines, or \$16,500,000.

To Holland by Seaplane

A FEW days ago Dutch seaplanes made the flight for the first time to British shores, arriving at Felixstowe for the purpose of taking back to Holland two Dutch medical

officers who had been visiting this country to investigate the British system of medical examination of pilots.

On the return journey, as neither of the Dutch seaplanes—two-seater float machines of the Friedrichshafen type—were equipped with wireless, a British F.5 flying-boat, with two Eagle VIII. Rolls-Royce engines, was detailed to escort them as far as Scheveningen. At this place the Dutch seaplanes turned inland, and, following the canals, reached Amsterdam, where they alighted safely. The British machine returned to Felixstowe. Both the out and return journeys occupied 1 hr. and 55 mins., and throughout the whole trip the F.5 was in wireless communication with its base at Felixstowe.



CRICKLEWOOD-BOURNEMOUTH PUBLIC AIR-SERVICE : Arrival at Bournemouth on the inaugural flight. Above, bird's-eye view, from about 2,000 ft., of Bournemouth, with Boscombe pier in distance, and, below, Bournemouth pier and gardens from about 1,000 ft.

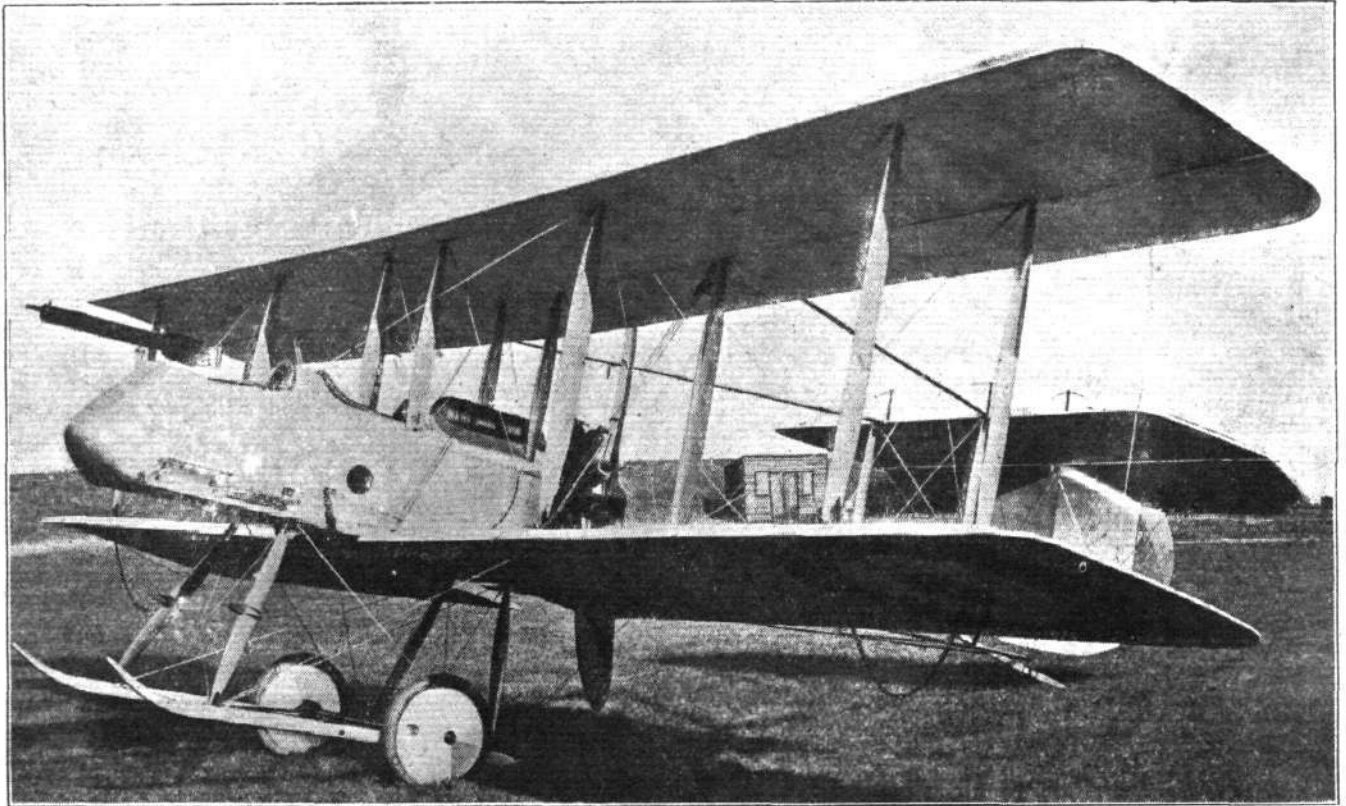
“MILESTONES”

THE VICKERS MACHINES

At the outbreak of hostilities in August, 1914, the whole of the Technical Offices and the Drawing Office staff of the Aviation Department of Messrs. Vickers, Ltd., were transferred from Vickers House to the Crayford Works. The work on experimental seaplanes, of which two were under construction, was abandoned, and all efforts concentrated on the

were fitted with the 100 h.p. *monosoupape* engine, of which Major Wood, realising its worth, had already ordered a great number.

Up to this time the armament of aeroplanes had not received much attention, either by the Services or designers. The chief functions of the R.F.C. had been that of carrying out reconnaissance flights and



THE VICKERS F.B.5.—This machine, which was fitted with a 100 h.p. Gnome monosoupape engine, was affectionately known as the “Gun ‘bus.”

Vickers Fighter F.B. 5, which was the only definitely offensive aeroplane then in existence. This was familiarly known as—

“The Vickers Gun-‘Bus”

With his usual foresight, the late Major Wood, having finished exhaustive tests, had a batch of 50 F.B. 5's actually in construction. These machines

the dropping of small bombs. Fighting in the air, as understood to-day, did not exist, and although observers sometimes armed themselves with Service rifles or revolvers for cases of emergency, machines very seldom approached sufficiently near to one another to exchange shots. The advent of the Vickers F.B. 5 marked an epoch in the history of



THE VICKERS E.S. 1, OR “BARNWELL BULLET.”—Note the stream-line body. The engine was a 100 h.p. Gnome monosoupape

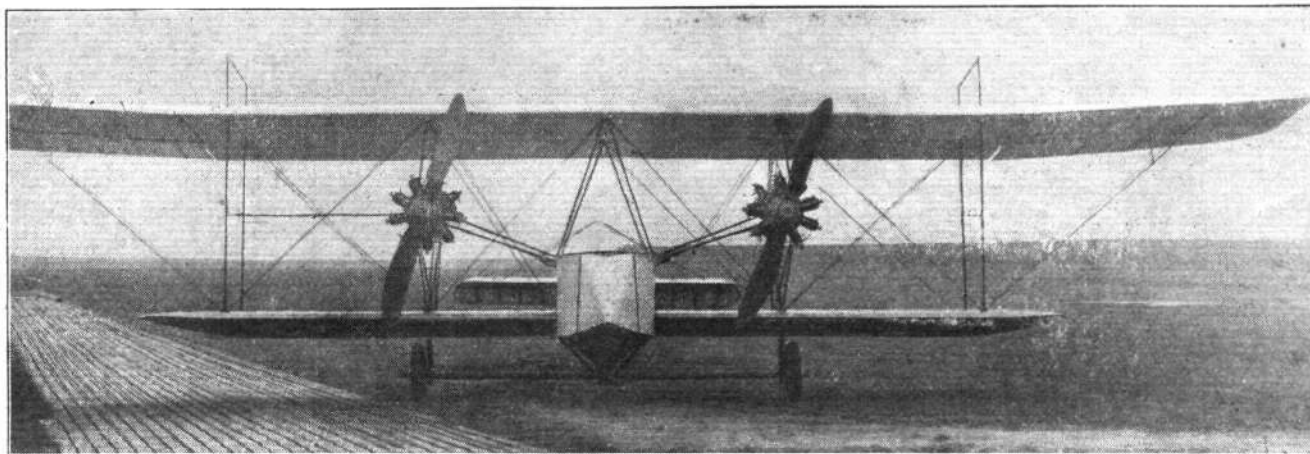
aeronautics, being the first fighting aeroplane, and was destined to influence the whole of aerial operations at the Front.

As is generally known, this machine was of the pusher type, and it was therefore possible to mount a Vickers gun in the nose of the *nacelle*, commanding an unobstructed and very wide range of fire

It was the arrival of this machine on the Western Front which established for the first time our aerial supremacy. This supremacy, thanks largely to the "Gun'-bus," lasted for many months, in fact until

second machine was built in August, 1915, which proved to be a really fast tractor scout, attaining a speed of over 120 miles per hour. The machine flew before His Majesty the King on the occasion of his visit to the Crayford works in September, 1915. Exhibition flights were also carried out before the Russian authorities.

The E.S. 2 was flown to Upavon for the official trials in November, 1915. The pilot proceeded *via* Hendon, stunted round the aerodrome, and left for his destination without landing. The exploits of



The Vickers F.B.7, 2 100 h.p. Gnome monosoupape engines

the Fokker, with its synchronised gun arrived to dispute it. In spite of this, however, Vickers Fighters remained in commission as late as March, 1916, and their work was of the greatest value.

"Barnwell Bullet," or E.S. 1. (Aug., 1915)

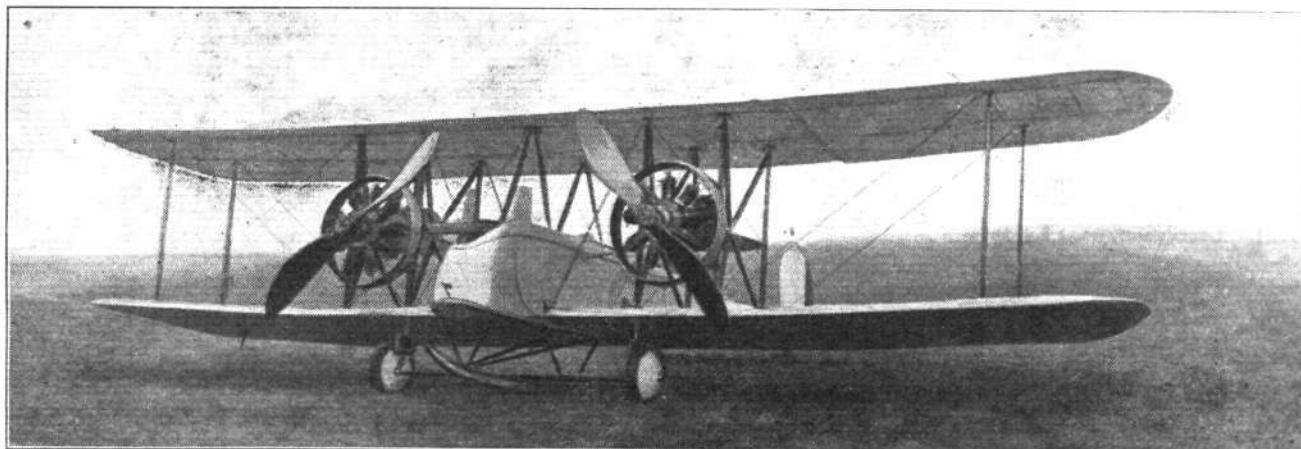
This machine, which was the first of the tractors, was produced in August, 1915. It was a streamline all-wood machine, built to a very great extent by the late Harold Barnwell personally, and was the pioneer of high performance aeroplanes, as the particulars in the accompanying tables will prove. All

the unknown aviator on the unknown machine aroused considerable interest.

As in the case of the E.S. 1, everything in this machine had been sacrificed to performance, and the Vickers synchronised firing gear not having yet been invented, the E.S. 2 could not be considered as a Fighting Scout.

The F.B. 7. (Aug., 1915)

The Vickers F.B. 7 was probably one of the first twin-engined machines to take the air. The first flights were made in August, 1915. The power plant



The Vickers F.B.8, 2 100 h.p. Gnome monosoupape engines

considerations having been sacrificed for performance, the view was unsatisfactory, and, as the synchronised firing gear had not yet been invented, it was not a real fighting machine.

It might be mentioned that the E.S. 1 was probably the first aeroplane which could be looped continuously, and yet climb so that each loop was higher than the previous one.

The E.S. 2. (Sept., 1915)

Owing to the experience gained with the E.S. 1, a

consisted of two 100 h.p. *monosoupape* engines, and the machine was designed to carry a Vickers 1-pdr. auto-gun. The Government looked upon the machine favourably, and ordered 12 similar ones. Information was afterwards received that the *monosoupape* engines were not available, and a request was made to substitute 80 h.p. Renault engines. This modification involved a considerable loss of power at a time when aeroplanes had little or no reserve. Realising that the machine would not be a success with the



THE VICKERS F.B. 12 PUSHER SCOUT.—This particular machine is fitted with a 100 h.p. Gnome, but others of the same type were fitted with 80 h.p. and 110 h.p. Le Rhones and 100 h.p. Anzani

lower-powered engines, the Government was requested to cancel this contract, and this was accordingly done. The machine, however, will always be of interest as the forerunner of the now famous "Vimy."

The F.B. 8. (Nov., 1915)

In November of the same year, a smaller twin-engined machine was constructed to carry a Lewis gun, but it soon became apparent that the same armament could be more effectively employed with a similar engine, but a smaller and handier machine. The type, therefore, was speedily abandoned. It is of interest to note that this was the fastest twin-engined aeroplane in 1915.

The F.B. 9. (Dec., 1915)

In December, 1915, a modified "Gun-'bus" was produced. It was effectually the same machine as the F.B. 5, but fitted with minor improvements such as streamline wires, Vee undercarriage, and an improved gun mounting; the speed was also substantially increased. This machine was known as the F.B. 9.

The F.B. 12. (June, 1916)

Early in 1916, a single-seater pusher scout, known as the F.B. 12, was constructed. This machine was

designed for the 150 Hart engine, but, owing to these engines being unobtainable, the 80 h.p. Le Rhone was substituted.

Having regard to the reduced power of the engine in use, the results obtained on its first flight in June, 1916, were considered very satisfactory, the speed attained being 95 miles per hour, and the manoeuvrability excellent. A similar machine was equipped with a 100 h.p. *monosoupape* engine, and sent to France in December, 1916, where it proved itself at least equal to other machines of a similar type then in use in that country.

The F.B. 14. (Aug., 1916)

This machine was a two-seater tractor biplane designed at the War Office request for a 200 h.p. B.H.P. engine, but, owing to this engine not having emerged from the experimental stage, a request was received to re-model the machine for 160 h.p. Beardmores. The first flight took place in August, 1916, but the decrease in the power unit resulted in a considerable depreciation in performance. Although 150 of these machines were contracted for, they were mostly delivered without engines, owing to trouble being experienced with the 160 h.p. Beardmore, and



THE VICKERS F.B. 14.—This machine was a two-seater tractor, with 160 h.p. Beardmore engine



THE VICKERS F.B. 19.—This was really a development of the “Barnwell Bullet,” and has a 110 h.p. Clerget engine

eventually 120 h.p. Beardmores were substituted. Needless to relate, with this further reduced horsepower, the performance of the machine was spoiled.

In the spring of the following year, the F.B. 14 was fitted with a 250 h.p. Rolls-Royce engine. It was sent to Martlesham in March, and the official tests compared very favourably with contemporary machines of other makes. It was then sent on to Orfordness to be used for experimental gun work, and it is of interest to note that on the occasion of the daylight raid on London by the Germans in July, 1917, this machine followed the raiders right back to Zeebrugge. Although the machine was able to overtake the raiders it could not tackle them, as it was fitted with an experimental arrangement of sights, which gave trouble in letting the sun shine down the sight, thus rendering them useless.

Vickers' steel construction made this machine very suitable for use in the tropics, and a large number were used in Mesopotamia.

The F.B. 19. (Aug., 1916)

This was a modified type of single-seater tractor scout produced in August, 1916, the visibility being greatly improved, whilst maintaining the excellent performance and manoeuvrability of its predecessor, the E.S. 2.

Several of these machines were supplied to Russia towards the close of 1916

The F.B. 16. (Dec., 1916)

This machine was a small tractor scout designed to take the Hart engine. As the Hart engine was still only in the experimental stage, the machine was modified to take the 150 h.p. Hispano-Suiza engine. It was ready in December, 1916.

On December 20, 1916, Messrs. Vickers' test pilot, the late Mr. Barnwell, being then indisposed, the late Capt. Simpson, R.F.C., was deputed to make the test flights. He proceeded to loop, dive and stall, and after the third loop, it was observed by those on the ground that something was happening to the planes. However, the pilot regained control, and at 50 ft., when everybody thought that the danger had been overcome, the machine suddenly dived straight into the ground, Capt. Simpson sustaining fatal injuries. After a full enquiry, instructions were received by Messrs. Vickers, Ltd., from the War Office to build another machine similar in every detail. The second machine was ready in January, 1917, and was tested by the firm's own pilot. By careful and systematic investigation, it was discovered that the weakness lay in the leading edges of the planes. This was an unforeseen trouble arising out



THE VICKERS F.B. 16 D.—The engine is a 150 h.p. Hispano-Suiza



THE VICKERS F.B. 24 G.—The engine is a 275 h.p. Lorraine.

of the general increase in the speed of aircraft at this period. It is of interest to note that the same trouble developed in a contemporary machine which was ultimately fitted with a solid 3-ply leading edge to overcome this difficulty.

This second F.B. 16, known as the F.B. 16A, was then sent on to the Testing Squadron at Martlesham Heath, from where an excellent report on its all-round performance was received. According to official tests, it beat the S.E. 5 and other types with similar engines, but the Air Board rightly decided that it would be unwise to disturb production of existing orders at a critical time.

The F.B. 24. (1916)

The next type of interest is the F.B. 24. This machine was originally designed in December, 1916, to take the Hart motor. The top plane was placed low, and the gunner, who was in the rear, had an excellent all-round field of fire.

After many vicissitudes, owing to the difficulty of obtaining from the Government engines of sufficient power, the type was abandoned for the time being. Later, the machine was re-designed to take various other engines, the 220 h.p. and 275 h.p. Lorraine being installed, also the 200 h.p. Hispano-Suiza. The results of the tests on this machine with the new 275 h.p. Lorraine engine proved to be very satisfactory, it attaining a speed of 130 m.p.h. at 10,000 ft., and climbing to this height in 11 minutes.

The F.B. 25. (1917)

This machine was constructed at the request of the War Office to take the Crayford rocket gun for

use in Zeppelin raids, and was designed for a 200 h.p. Hispano-Suiza engine, but when the time arrived to instal the engine, an engine of this make, but of only 150 h.p., was allotted, the performance of the machine naturally being materially affected. It was, however, crashed by the Service pilot on its way to Martlesham in May, 1917, and as the inflammatory bullet had just been introduced into the Corps, the rocket gun was abandoned, and the machine with it.

The F.B. 26. (July, 1917)

The F.B. 26, constructed in July, 1917, was the outcome of the first Pusher Scout, the F.B. 12, which, having proved so handy, was modified to take the 150 h.p. Hispano-Suiza engine. This machine was flown by Capt. Barker and Capt. McCudden, V.C., D.S.O., both of whom were very pleased with its performance and general manœuvrability. Six more were constructed to take Eeman triple gun-mounts; both forward and elevated, the forward mountings proving very satisfactory, but the elevated mountings, being too unwieldy, were abandoned. The machines were tested at Martlesham, and later at Biggin Hill.

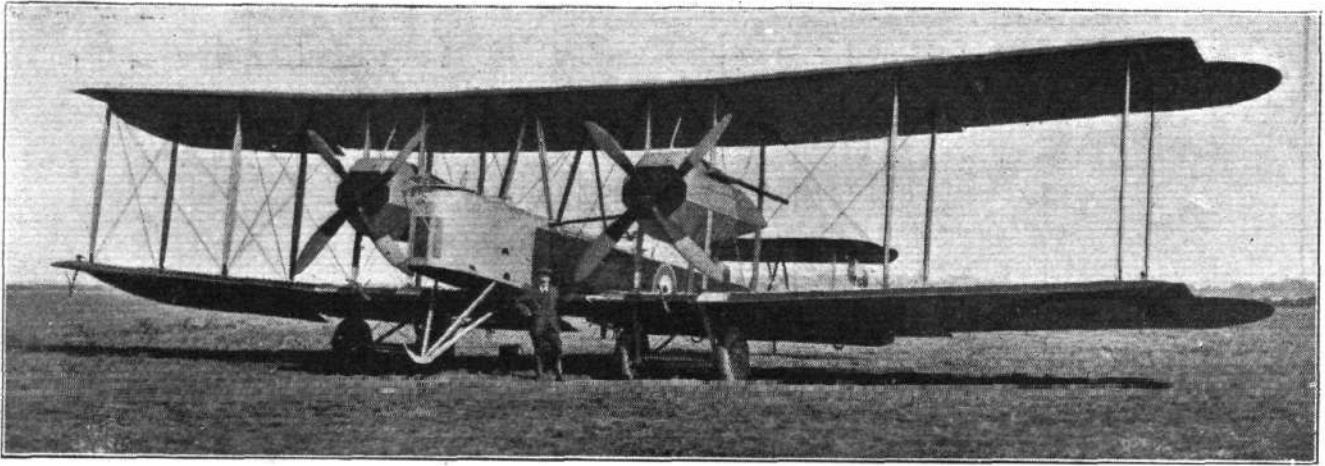
A further modification, which was armoured and intended for trench strafing, was also constructed to take the 200 h.p. B.R. 2 engine, the results proving eminently satisfactory. At the conclusion of hostilities, Messrs. Vickers, Ltd., were still awaiting orders concerning this type of machine.

The F.B. 27 "Vimy." (Nov., 1917)

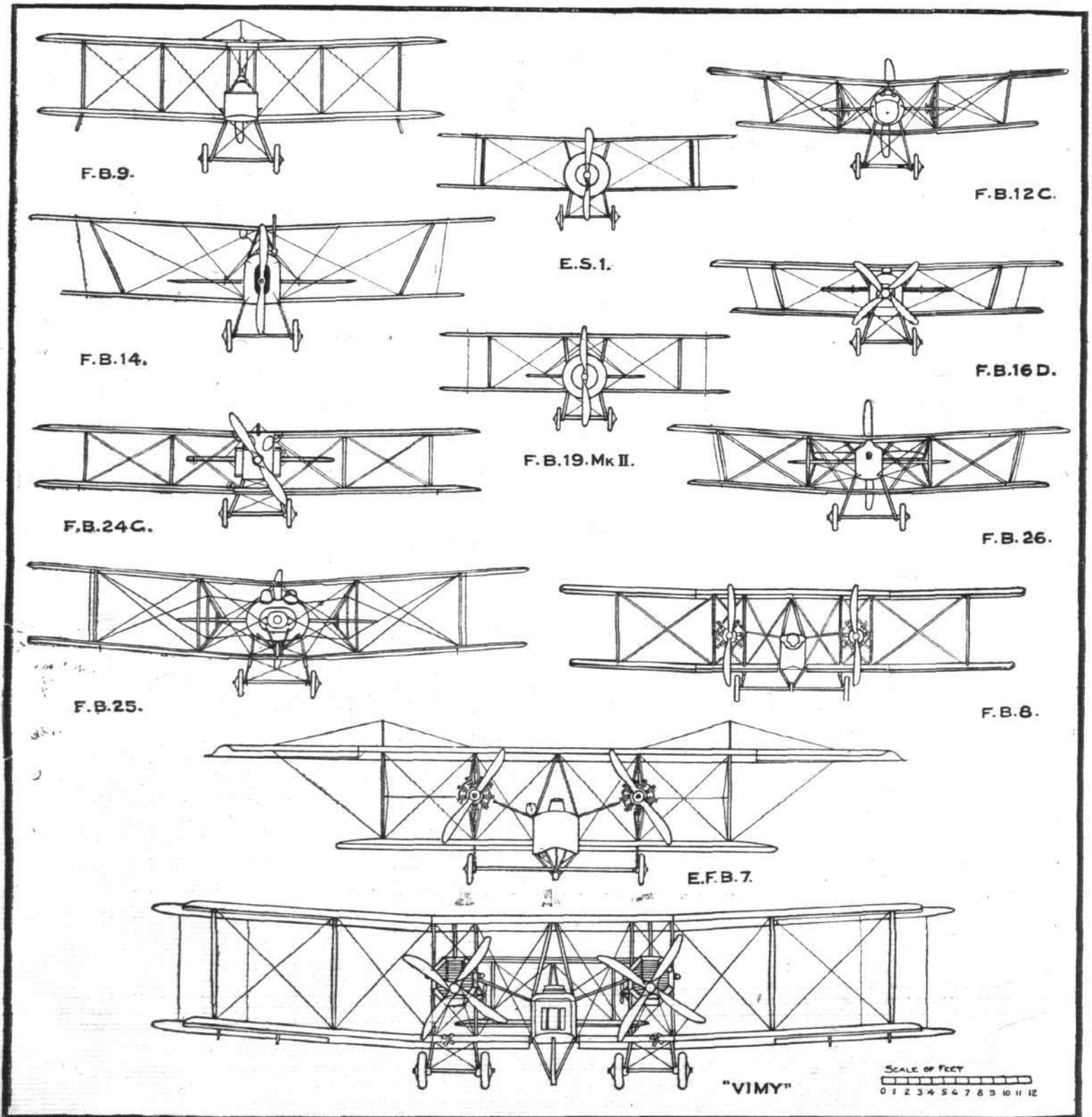
In June, 1917, Messrs. Vickers, Ltd., were invited by the Air Board to submit designs for a twin-



THE VICKERS "VAMPIRE."—This machine, which is a modification of the F.B. 26, is armoured and intended for trench fighting. The engine is a 200 h.p. B.R. 2



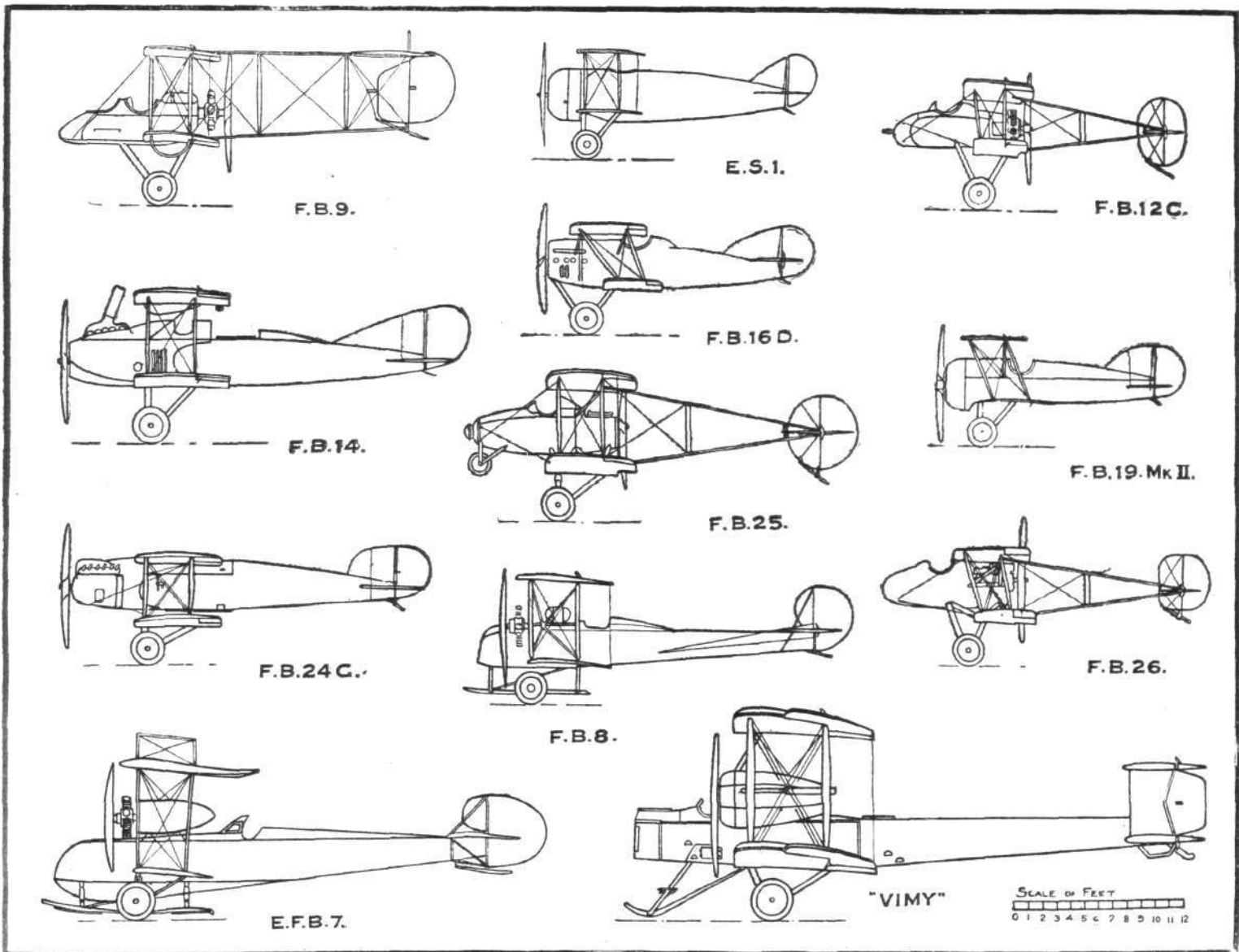
THE VICKERS "VIMY" BOMBER.—The engines are Mark VIII, Rolls-Royce Eagles.



Front Elevations of the Vickers machines
766



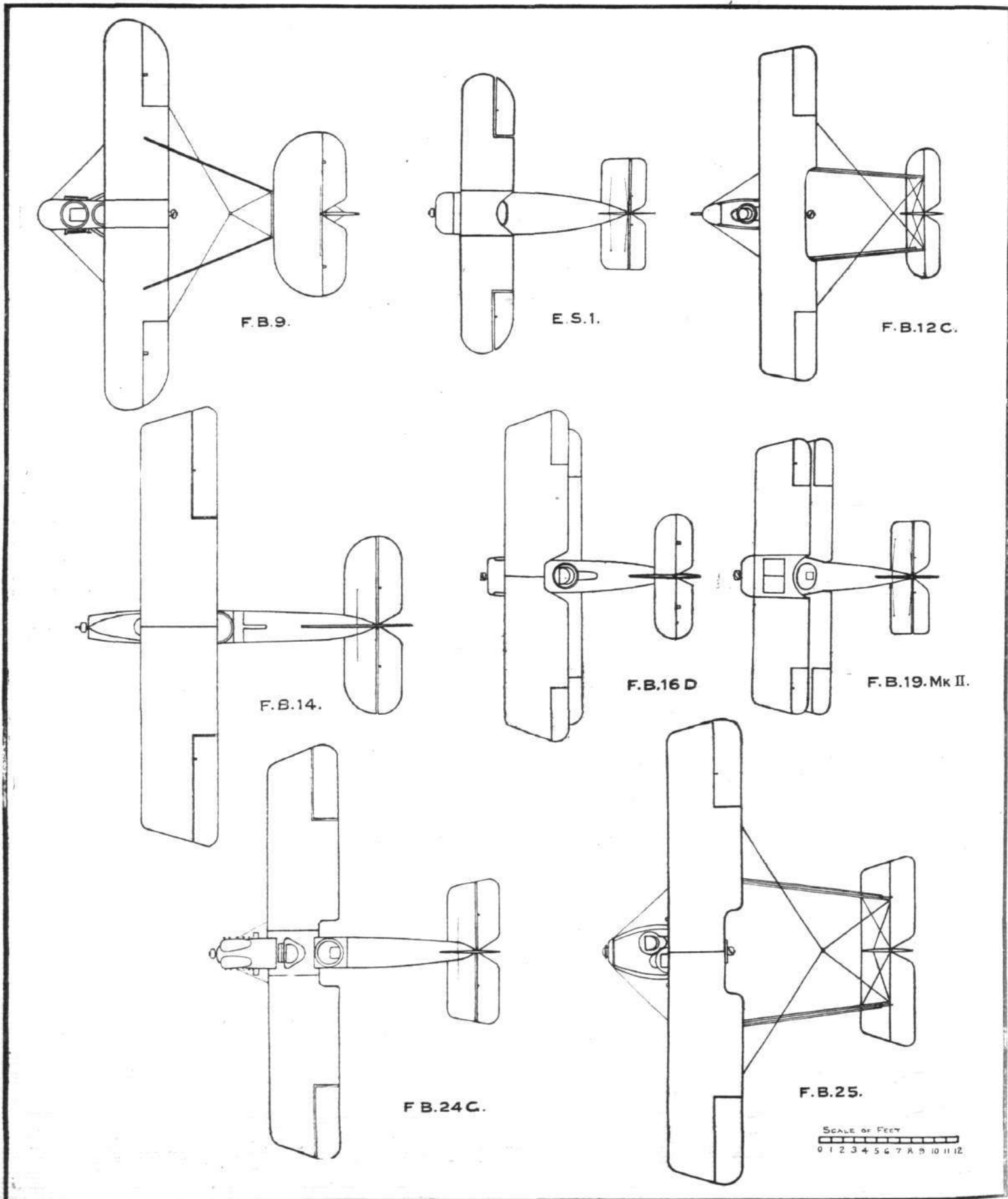
Side view of the Vickers "Vimy" bomber



Side elevations of the Vickers machines

engined night bombing machine. Having already had considerable experience with twin-engined machines, and the firm's designs being approved, the construction of F.B. 27 was immediately proceeded with. The first flight was made on November 30, 1917, by the late Captain Gordon Bell, who was then the firm's chief testing pilot, and who, after a few slight modifications, pronounced the machine satisfactory and highly promising.

In January, 1918, this machine was flown to Martlesham Heath, fitted with two 200 h.p. Hispano-Suiza engines, and, in spite of the low power, lifted about one-third of a ton more load than other much larger twin-engined machines fitted with the 300 h.p. Rolls-Royce engines. Needless to say, the test pilots at Martlesham Heath were very pleased with it on all points. During this time a second machine was constructed with two 260 h.p. Maori-Sunbeam engines,



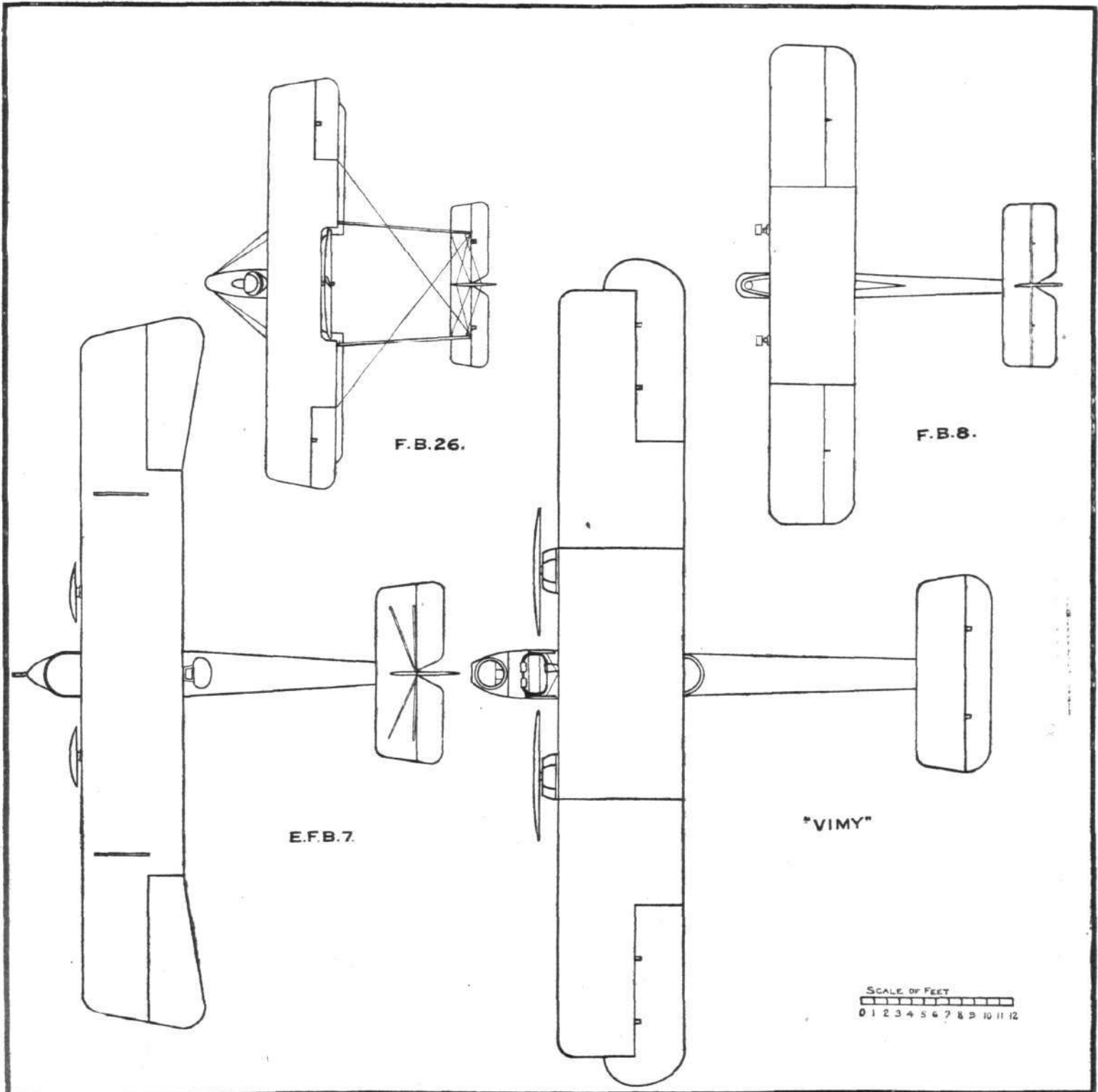
Plan views of the Vickers machines

which slightly improved the climb. Very few tests were carried out owing to the machine being crashed, the cause of which was officially stated to be engine failure. A third machine was then fitted with Fiat engines. This machine was crashed shortly after arrival at Martlesham, owing to the pilot stalling shortly after leaving the ground. Unfortunately it had been loaded with live bombs, which exploded on reaching the ground, causing fatal injuries to the pilot.

An order was then received by Messrs. Vickers, Ltd., for 350 of these machines, and many large orders were also given to several firms, making a total of well over 1,000, the Air Board intimating that the machines delivered during 1918 were to be utilised for anti-submarine work, and that subsequent deliveries were earmarked for night bombing in France.

In October, 1918, the fourth experimental "Vimy" was sent to Martlesham Heath, fitted with two 400 h.p. Rolls-Royce engines, where it carried a load of 12,500 lbs. (nearly 6 tons) at a speed of 100 miles per hour, and an endurance of 11-12 hours: a remarkable performance for a machine of only 68 ft. span.

During the tests, instructions were received by the firm to send a pilot to Martlesham Heath to fly this machine to Nancy, whence it was the intention of the authorities to send it on very long bombing raids into the heart of Germany, including Berlin. However, the Armistice was signed before a suitable opportunity occurred, and the machine has been returned to Martlesham Heath for the continuation of the official tests.



Plan views of the Vickers machines

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

THE FLYING SERVICES FUND

Grants and Allowances.—The following are the details of the Grants and Allowances which were made at the meeting of the Committee on May 28th, 1919:—

- (36) An allowance of £5 a month for six months to the widow of a Leading Mechanic in the Royal Naval Air Service who had been killed on active service.
- (47) An allowance of £3 a month for six months to the widow of a Corporal in the Royal Flying Corps who has been killed on active service.
- (67) An allowance of £2 a month for six months to the mother of a 3rd Class Air-Mechanic in the Royal Flying Corps who had been killed on active service.
- (97) An allowance of £2 a month for six months to the widow of a 3rd Class Air-Mechanic in the Royal Air Force who had been killed on active service.
- (107) An allowance of £1 a month for six months to the mother of a 3rd Class Air-Mechanic in the Royal Flying Corps who had been killed on active service.
- (118) An allowance of £4 a month for three months to the mother of a 3rd Class Air-Mechanic in the Royal Air Force who had been killed on active service.
- (179) A Grant of £10 to an Ex-2nd Class Air-Mechanic in the Royal Flying Corps who had been incapacitated on active service.
- (193) An allowance of £4 a month for twelve months, to cover Rent, Rates, etc., to the mother of a 2nd Lieutenant in the Royal Flying Corps who had been killed on active service.
- (202) An allowance of £2 a month for six months to the widow of a Private in the Royal Air Force who had died on active service.
- (203) An allowance of £2 a month for six months to the mother of a 1st Class Air-Mechanic in the Royal Air Force who had been killed on active service.
- (205) An allowance of £2 a month for six months to the widow of a Private in the Royal Air Force who had died on active service.
- (206) An allowance of £2 a month for six months to the mother of a Private in the Royal Air Force who had died on active service.
- (207) An allowance of £3 a month for six months to the widow of a 1st Class Air-Mechanic in the Royal Air Force who had died on active service.
- (208) An allowance of £4 a month for three months to the mother of a Cadet in the Royal Air Force who had died on active service.
- (209) An allowance of £2 a month for six months to the

mother of a 2nd Class Air-Mechanic in the Royal Air Force who had died on active service.

(210) An allowance of £2 a month for six months to the widow of a Private in the Royal Air Force who had died on active service.

THE FLYING SERVICES FUND

(Registered under the War Charities Act, 1916)

Administered by the Royal Aero Club

For the benefit of *Officers, Non-Commissioned Officers and Men* of the ROYAL AIR FORCE who are incapacitated while on duty, and for the widows and dependants of those who are killed or die from injuries or illness contracted while on duty.

Honorary Treasurer:

The Right Hon. LORD KINNAIRD.

Committee:

H.R.H. PRINCE ALBERT, K.G. (*Chairman*).

Mr. CHESTER FOX.

Lieut.-Col. T. O'B. HUBBARD, M.C., R.A.F.

Lieut.-Col. C. E. MAUDE, R.A.F.

Brig.-Gen. R. H. MORE, C.M.G.

Secretary:

H. E. PERRIN.

Bankers:

MESSRS. BARCLAYS BANK, LTD., 4, Pall Mall East, London, S.W. 1.

Subscriptions:

	£	s.	d.
Total subscriptions received to May 6, 1919 ..	15,001	9	10
Proceeds of Church collections at the Headquarters, North-Western Area, Royal Air Force, Glasgow		3	13 6
Headquarters, South-Western Area, Royal Air Force, Salisbury (Tenth donation, making a total of £1,186 3s. 6d.)	50	0	0
Collected by H. Leslie Rollett	4	6	1
Collections made at Church Parade at No. 143 Squadron, Royal Air Force, Detling (Second contribution)		1	0 0
Max Worms		2	2 0
Total, June 10, 1919	15,062	11	5

**Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W. 1.**

H. E. PERRIN, Secretary.

THE ROLL OF HONOUR

Published May 21st.

Accidentally Killed.

Beanlands, Capt. B. G. P., M.C. Cooper, Lieut. D. G. Davis, Sec. Lieut. C. S. Harrison, Sec. Lieut. C. Harwood, Lieut. G. Hunt, Lieut. C. F.	Knott, Capt. E. M., A.F.C. Kretmar, Sec. Lieut. W. F. K. Robinson, Maj. H. H., M.C. Salmon, Sec. Lieut. F. C. Smith, Sec. Lieut. A. S. Stace, Lieut. A. H. B. Twilton, Lieut. R. J.
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Died of Injuries.

Perrin, Maj. M. N.

Published May 28

Killed

Cartwright, Sec. Lieut. J. W. P. Hayne, Capt. E. T.
Thornhill, Lieut. A. G.



An R.A.F. Search Unit

A SPECIALLY formed unit of the Royal Air Force left London for the Headquarters of the R.A.F. in the Field on Friday last. It consists of 20 officers, who will be detached to various army units for the purpose of searching for any

Died of Injuries

Warman, Capt. C. W., D.S.O., Norton, Lieut. G. M.C.

Drowned

Evans, Lieut. L. L. M. Stokes, Lieut. H. J. E.

Published June 6

Killed

Barclay, Sec. Lieut. J. G.	Prince, Sec. Lieut. F. G.
Barker, Capt. L. I.	Smith, Sec. Lieut. H. C.
Jacobi, Lieut. E. W. S.	Spratt, Sec. Lieut. S.
McEachran, Lieut. N.	Weaver, Lieut. H. J.

Died of Injuries

Gibbs, Sec. Lieut. S. H.	Turner, Lieut. B. E. N.
Jemmerson, Sec. Lieut. G. E.	Wright, Lieut. C. V. C.
Rawlings, Capt. P. T.	Wyatt, Sec. Lieut. W.

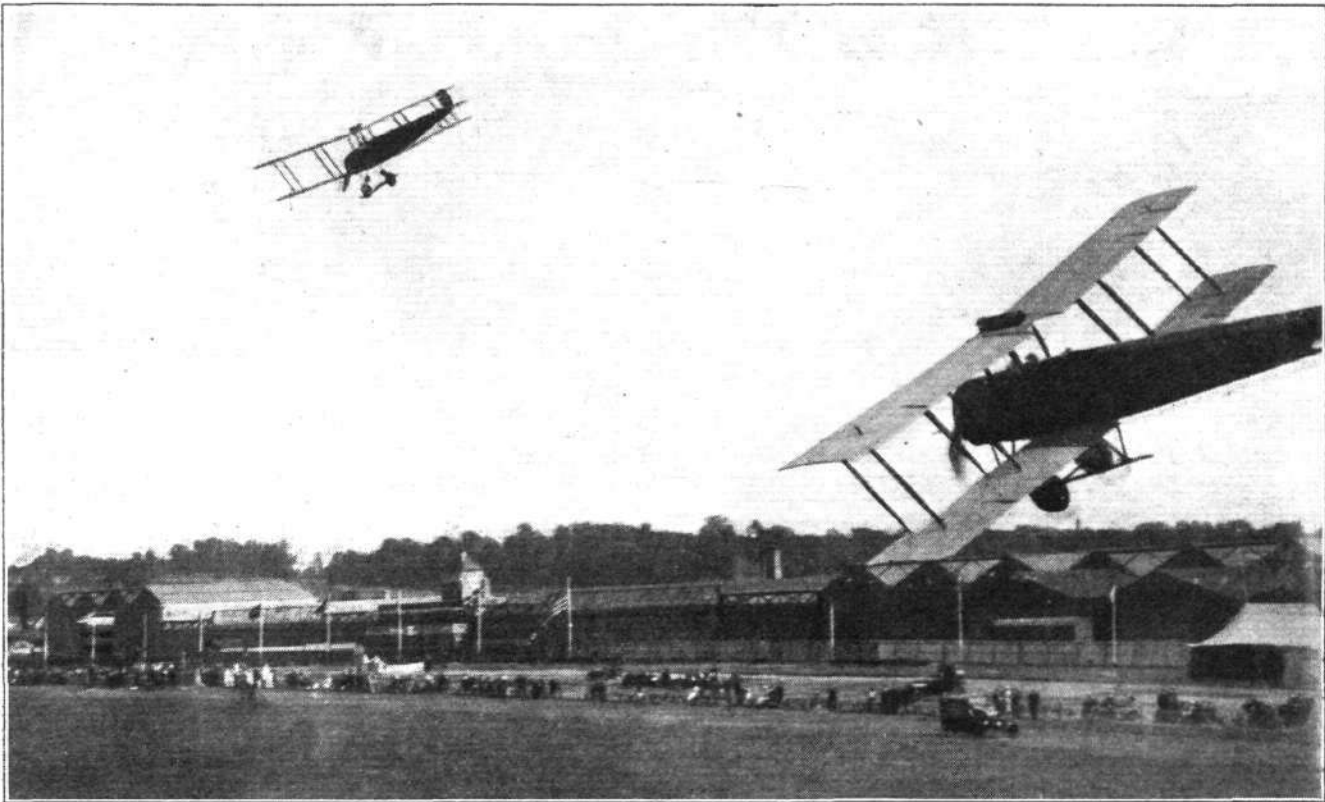
Missing

Jefferson, Capt. E. B. B.

possible traces of "missing" officers and other ranks of the R.A.F. on the Western front.

This work is being undertaken to ensure, as far as is humanly possible, that no members of the force are being detained, and are lying helpless in the hands of the enemy.

CIVILIAN FLYING
WHITSUNTIDE AT THE AERODROMES



AT HENDON AERODROME : Racing on Whit Saturday. The two Avros flew evenly together in a remarkable way. The left-hand machine in our photograph, piloted by Mr. G. R. Hicks, won Saturday's race. On the Monday, Maj. Carr, who is flying the other Avro, had a mishap, but without serious consequences

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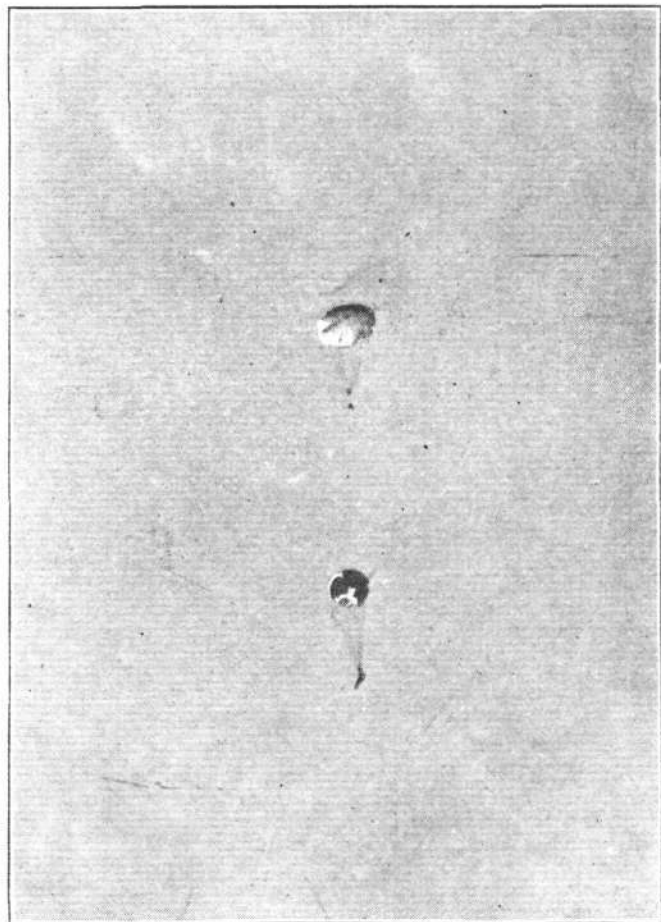
HENDON

ALTHOUGH not being quite such a remarkable show as the previous week's, the Whitsun week-end at Hendon was, in its way, an historical event, inaugurating as it did the re-commencement, after nearly five years of War, of aeroplane racing. The first even of 1919 was a cross-country handicap, flown last Saturday for prizes presented by the Grahame-White Co., Ltd., the first prize being 50 guineas and the second 20 guineas. The course was from Hendon to Bittacy Hill, and consisted of five laps, totalling a distance of about 20 miles. Four machines had been entered: An 80 h.p. le Rhone G.W. Bantam, flown by Capt. Chamberlayne, A.F.C.; a G.W. Avro biplane, 110 h.p. le Rhone, flown by Mr. G. R. Hicks; an Airco biplane, 90 h.p. R.A.F., flown by Capt. Gathergood; and a B.A.T. Bantam, 170 h.p. Wasp, flown by Mr. C. Turner. The Airco biplane did not start, and in its stead was entered a G.W. Avro, 110 h.p. le Rhone, flown by Maj. Carr.

The two Avros got away within a short time of one another, followed a little later by the diminutive G.W. Bantam. The B.A.T. Bantam, on account of its great speed, started scratch. It was evident that the two fast Bantams had difficulty in cutting the sharp corners fine enough, both machines side-slipping upwards every time one of these sharp curves had to be negotiated. During the race the Avro biplane piloted by Maj. Carr developed engine trouble, and had to retire. The result of the race was that Hicks, on the Avro, was first, Chamberlayne on the G.W. Bantam second, and Turner on the B.A.T. Bantam third.

After a short interval a G.W. "Kangaroo" took the air, and it was announced that Mr. W. Newell would make a double parachute descent from this machine. At an altitude of about 1,500 ft. the parachute left the machine, and after dropping a considerable distance, Mr. Newell was seen to become detached from it in a second parachute, landing safely on the other side of the aerodrome, close to the railway embankment. The first parachute sailed away serenely across country, landing in a field a couple of miles away.

Later in the day there were exhibition flights by all the Hendon pilots, and passenger flights were in great demand. Visitors to the aerodrome had the pleasure of witnessing some trial flights of the B.A.T. F.K. 26, a beautiful four-seater, which was piloted by Maj. Draper. The machine



Mr. W. Newell's "double"-parachute descent. He has just left the first parachute, and the second one is nearly open

"Flight" Copyright.



"Flight" Copyright.

THE CROSS-COUNTRY HANDICAP AT HENDON AERODROME ON WHIT-MONDAY : The five starters lined up for the race, at the other side of the aerodrome

was described in FLIGHT on April 17, and it is not, therefore, necessary to do more here than record the fact that she flew exceedingly well, appearing to be very fast and flying steadily in spite of the gusty wind.

On Whit-Sunday there was again a large number of visitors to the aerodrome, and passenger flights and exhibition flights were the order of the day. Unfortunately during a parachute descent Mr. Newell met with a slight mishap. On coming down he was in danger of landing on top of a hangar, and in swinging to avoid this he slightly injured his knees. However, we understand that the injuries are not serious, although Mr. Newell was unable to repeat his parachute descents on Whit-Monday.

During the morning the B.A.T. F.K. 26 made a fine flight, piloted by Maj. Draper, to Joyce Green Aerodrome, carrying as passengers Commander Towers, Commander Bellinger, and Col. Spenser Grey, D.S.O. After lunch at Joyce Green,

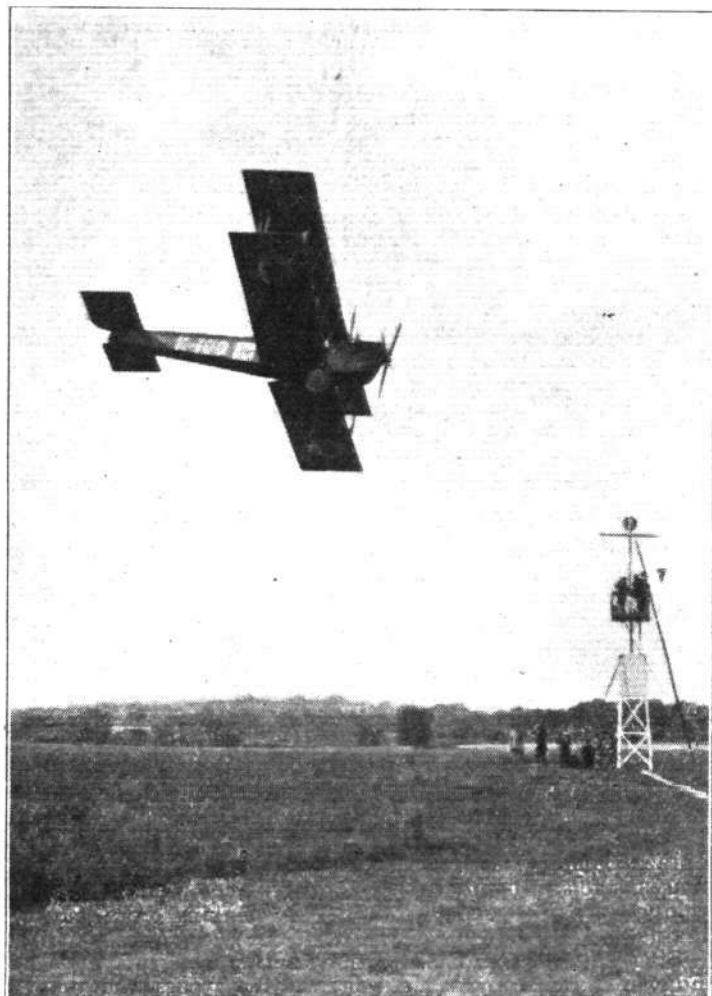
the party returned to Hendon. Mr. C. Turner, on a B.A.T. Bantam, escorted the passenger machine on the journey.

On Whit-Monday all the enclosures at Hendon were crowded with visitors, the 'drome presenting a view very reminiscent of old times. The chief attraction of the programme was a cross-country race (handicap) to Bittacy Hill and back (10 laps). The prizes for this race were presented by the Anglo-American Oil Co., Ltd., and were:—First, 100 guineas and a cup; second, 30 guineas; third, 20 guineas. There were five entrants for the race: Capt. Chamberlayne on an 80 h.p. G.W. Bantam; Maj. R. H. Carr on an 110 h.p. Avro; Mr. G. R. Hicks on another 110 h.p. Avro; Capt. Gathergood on an Airco 6 biplane, 90 h.p.; and Mr. C. Turner on a B.A.T. Bantam, 170 h.p. Wasp engine. The wind was very gusty near the ground, which made rounding the flags difficult, but all the pilots steered their craft in fine style. After his first lap Maj. Carr was just starting for his second when his



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Finish of the cross-country handicap at Hendon Aerodrome on Whit-Monday by Mr. C. Turner in a single-seater B.A.T. Bantam. Crossing the line at the enclosures at over 120 m.p.h. Inset, the judge, Mr. J. E. Withers, presenting the winner's cup of the Anglo-American Oil Co. to Mr. C. Turner



"Flight" Copyright.

Capt. Gathergood on a D.H. 6 crossing the line in front of the enclosures in the cross-country handicap at Hendon on Monday. He was, however, disqualified, having passed the wrong side of one of the route flags when starting. Note the Pylone, erected for the first time since the War

engine stopped. He was then somewhere near the railway embankment and attempted to regain the aerodrome. Finding that he could not manage this against the wind, and being then over the railway, on which, just below him, was at the time a passenger train, he did a sharp right-hand turn and disappeared from view behind the railway. Some anxiety was felt for his safety, but by skilful piloting Maj. Carr was



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Maj. J. H. Ledebuer, who was handicapper at Hendon for the Whitsun meeting

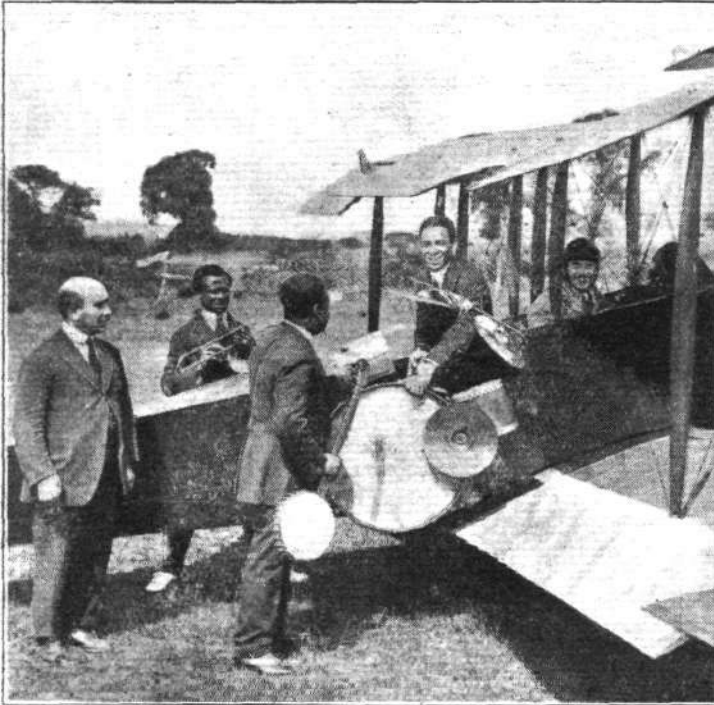
able to effect a landing without seriously injuring himself, although he was somewhat shaken. The relationship between the various "members" of the Avro was, we believe, considerably strained, and the engine will not be on speaking terms with the rest of the machine for some little time. Perhaps it is as well, since it is apparently the same sulky engine which let Carr down in Saturday's race.

However, to return to the race. Mr. Turner, on the B.A.T. Bantam, finished first; Mr. Hicks, on the Avro, second; and Capt. Chamberlayne, on the G.W. Bantam, third. This was the ruling, but as a matter of fact, Capt. Gathergood finished well ahead on his Airco 6. He was, however, disqualified for not rounding one of the flags at the start, his instructions having apparently been inadequate, and Capt.



"Flight" Copyright.

AT THE LONDON AND PROVINCIAL AERODROME, STAGG LANE, HENDON : An L. and P. machine taking over visitors to see the racing at the London Aerodrome



"Flight" Copyright.

Arrival of Pilot Lieut. Stacks with the Jazz band instruments at the L. and P. Stag Lane Aerodrome, where, between flights, they helped visitors later to pass the time at tea, tennis, etc.

Gathergood being under the impression that this flag need not be rounded during the start. It was very hard luck on him, as he handled the Airco 6 (jocosely known as the "Skyhook" or "The Clutching Hand") extremely well. Mr. Turner, after winning the race, made a magnificent "zoom," and finished up with a very fine upside-down flight. He was

later presented with the first prize by Mr. J. E. Withers, who was judge of the meeting. Our old friend, Mr. A. G. Reynolds, was to have re-appeared in his old rôle of timekeeper, in which capacity he will be remembered by all old-time visitors to Hendon, but we regret to say he has had to undergo an operation, and could not, therefore, be present. All will wish him a speedy recovery.

The rest of the afternoon was devoted to exhibition and passenger flights, of which a great number were given. As already mentioned, Mr. Newell was unable to perform his parachute jumps, and in his stead a sand-bag was dropped by parachute from one of the Grahame-White Blackburn "Kangaroos."

A great centre of attraction in the enclosure was formed by one of the G.W. Bantams, 80 h.p. le Rhone, exhibited in a roped-in square, which also contained one of the little "Buckboards" which the Grahame-White company is introducing in this country. It would be difficult to say which of the two attracted the greater attention. The "Buckboard" had the advantage of being able to take a passenger.

STAG LANE AERODROME (L. and P.)

A CONSIDERABLE amount of flying was done during the Whitsun holiday at Stag Lane Aerodrome, Hendon, the headquarters of the London and Provincial Aviation Co. We noted many improvements at this aerodrome, and we see no reason why, within a very short space of time, it should not become a very popular rendezvous for the great F.P. (Flying Public). Not only is the immediate and surrounding country exceedingly picturesque and restful, but the comfort and amusement of the visitor on the aerodrome are well provided for. Besides comfortable lounge chairs in the open, there is now a well-equipped tea and dancing pavilion, and a tennis court, so that visitors may find plenty to do when interest in flying lags—if it should do. There is in addition a Jazz Band! During the week-end three of the L. and P. 'buses, safe and handy little tractor biplanes, were kept busy taking up passengers for "flips" and making cross-country flights.

Stag Lane Aerodrome, by the way, is easily got at. All Edgware trams and 'buses practically "pass the door," Stag Lane being only a little way further on towards Edgware from Collindale Avenue, Hendon.

THE VICTORY AERIAL DERBY

AFTER five years the Aerial Derby is to be revived, and the fourth of the series—the Victory Aerial Derby—is fixed for Saturday, June 21 next. The course will be the same 95-mile circuit—Hendon—Kempton Park—Epsom—West Thurrock—Epping—Hertford—Epping—as was used for the 1914 event, but owing to the great advance in the speed of machines it will be covered twice this year. As before, the race will be organised by the Grahame-White Co., Ltd., under the auspices of the Royal Aero Club, and the first home will receive the *Daily Mail* gold trophy (value 200 guineas) and the "Shell" prize of £500, while for the second there is the "Shell" trophy and £100. There will also be a sealed handicap with three "Shell" trophies and "Shell" prizes of £100, £50 and £25, for the first, second and third respectively.

The race is to start at 3.30 p.m., and it is anticipated that the second circuit will be entered up to about 4.10 p.m., while the winner should cross the finishing line—by No. 1 pylon at Hendon—soon after 4.45 p.m.

The turning-points and the distances round the course are as follows:—

Turning points.	Distance	
	From Start.	From Last point.
	Miles.	Miles.
1. Kempton Park (Waterworks north of railway station)	14	—
2. Epsom (Grand Stand on Race Course)	24	10
3. West Thurrock (Wouldham Cement Works, tall factory chimneys and large shed)	50½	26½
4. Epping (Parish Church)	67½	17½
5. Hertford (large White Cross in Field adjoining railway station, north of town)	78½	10½
6. The London Aerodrome, Hendon (Starting, Passing Over on first circuit, and Finishing at No. 1 Pylon)	94½	16

At each turning-point, which the competitor must pass on his left, the machine must fly at a sufficiently low and close range to enable its identification number to be easily verified by the official observers. Each machine will carry a number, and arrangements may possibly be made to use the Air Navigation Regulation Registration Number. Pilots or manufacturers' own racing colours may be carried in addition.

Competitors must comply with the Air Navigation Regulations; stoppages *en route* are not prohibited.

The contest is open to persons of any nationality, except those of enemy origin, duly entered on the competition register of the Royal Aero Club and licensed under the Air Navigation Regulations. No aircraft or engine of enemy origin or manufacture may be used.

Entries, with the fee of £10, returnable to those competitors completing the course, should be sent to the Secretary, London Aerodrome, N.W., and the list closes at noon on Saturday next.

Pilot.	Nationality.	Aeroplane.	Engine.
1. Clifford B. Prodger ..	American ..	B.A.T.	A.B.C.
2. Capt. P. R. T. Chamberlayne	British ..	Grahame-White.	Le Rhone
3. Maj. C. Draper, D.S.O.	British ..	B.A.T.	A.B.C.
4. Lt.-Col. G. L. P. Henderson, M.C.	British ..	F.4 Martinsyde	Rolls-Royce
5. Major R. H. Carr ..	British ..	Grahame-White.	Le Rhone

It may be recalled that the race was first held in 1912, when Mr. T. Sopwith was the winner on a 70 h.p. Bleriot monoplane, his average speed being 59 m.p.h. In 1913 Mr. Gustav Hamel, on an 80 h.p. Morane monoplane, won at a speed of 76 m.p.h., and the winner of the 1914 contest was Mr. W. L. Brock, on an 80 h.p. Morane monoplane, averaging 72 m.p.h.

New French Height Record

DETERMINED that there should be no doubt about his height record, Lieut. Casale last week made another attempt

and went 200 metres higher than his previous score. On his 300 h.p. Hispano-Suiza-Nieuport, he started from Villacoublay and went up to 9,500 metres (51,150 ft.).

CAPE-CAIRO AIR-WAY

A HIGHLY interesting résumé appears in *The Times* this week of the scheme being carried out for organising the air-route from Cairo to the Cape, and the progress made up to the present. The following are the details as published from a correspondent:—

The cessation of hostilities against Turkey on October 31, 1918, left the R.A.F., Middle East, in a position to begin at once the preparation of post-war aerial routes. Advantage was taken of the favourable opportunity by Major-General Salmond, and parties were selected to survey the possible air-routes from Cairo to the Cape.

It may at first seem strange that Africa, one of the least explored continents, should be chosen as the first over which to make a transcontinental air service, but the Cape to Cairo route possesses the great advantage, from the Air Force point of view, of being entirely under British control. There was consequently no delay in negotiating with other Powers.

Two years previously the route from Sollum to Cairo had been used by Major MacLaren when flying from England to Egypt, and over this preliminary portion of the journey from England aerodromes had been established at Sollum, Mersa Matruh, and Amria (at the edge of the Delta, near Alexandria), whilst intermediate landing grounds had been cleared for use in emergency.

Also in 1915 aeroplanes had been employed in the Sudan against Ali Dinar of Darfur and an aerodrome had been constructed at Khartum.

In the absence of good maps of the Southern Sudan or Central Africa it was a problem of some difficulty for the Air Staff at Cairo to pick out a proposed route, but with help from the Air Ministry in London preparations were pushed on with such speed that in about a month after the signing of the Armistice with Turkey No. I African Survey Party was ready to start. Parties Nos. II and III were ready a few weeks later.

The continent was divided into three sections: No. I party was to survey Egypt, the Sudan, and as far south as Victoria Nyanza; No. II covered the central stretch from Victoria Nyanza (partly through what was German East Africa) to Kituta at the southern end of Lake Tanganyika; No. III party had to inspect the line from Kituta to Cape Town.

The first party, which had the longest and easiest stretch to cover, followed the course of the Nile almost throughout and were aided by that river in the transportation of men and stores. The second party had a short stretch over little-known country presenting immense difficulties from every point of view. The southern party covered a tremendous distance, but followed the course of the railway almost throughout.

It was intended that each officer should at once proceed to one or more stations on the route and select an aerodrome site. He was then to engage local native labour to clear and prepare the spot, advising the leader of his party of the progress made. Supplies of petrol and oil were carried, so that the aerodromes might be ready to receive aeroplanes as soon as the sites were cleared. Each party consisted of the leader, five to eight other officers, and less than 20 other ranks; all chosen from the R.A.F. in the Middle East.

In the original instructions the following were the stations to be investigated. The route prepared by headquarters, Middle East, has been followed out and found very satisfactory.

No. I party (commanded by Major Long, D.S.O.).—Cairo, Assiut, Assuan, Wadi Halfa, Meroe, Atbara, Khartum, Kodok (Fashoda), Gondokoro, Jinja, Port Victoria.

No. II party (commanded by Major Emmett).—Mwanza (south end of Victoria Nyanza), Ujiji, Kituta.

No. III party (commanded by Major Court-Treant).—Abercorn (near Kituta), Broken Hill, Livingstone, Salisbury, Buluwayo, Palachwe—Mafeking (or Kimberley—Pretoria), Bloemfontein, Beaufort West, Cape Town.

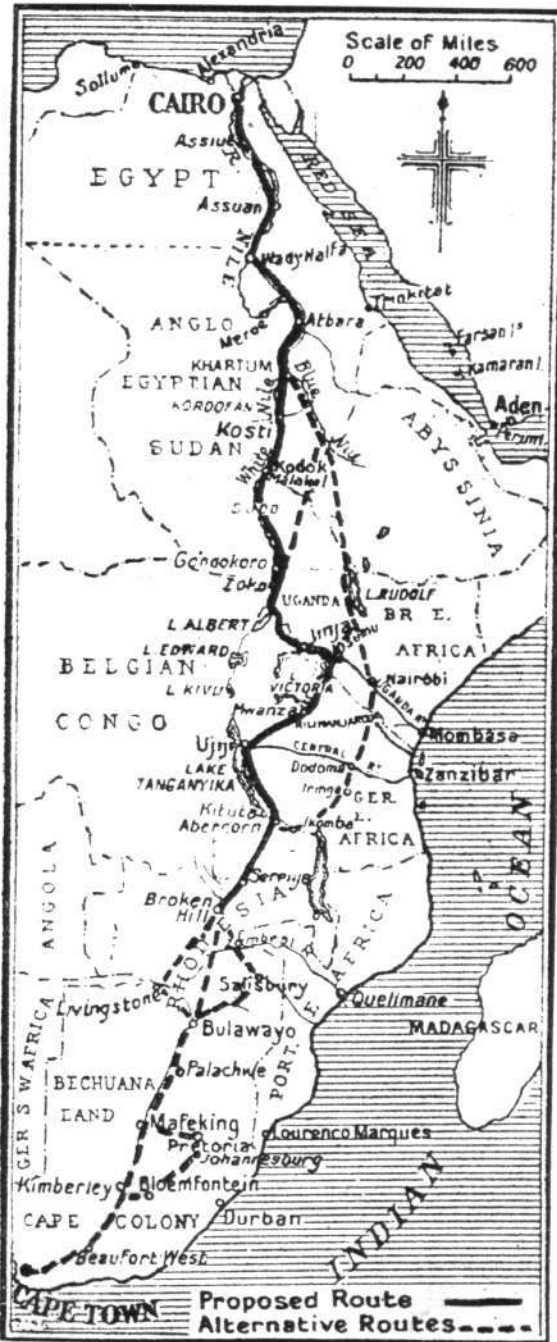
For convenience the southern party was subdivided, Captain Shortridge being responsible for the route from Abercorn to Buluwayo.

The three leaders of the expedition are all acquainted with the work and the nature required; Major Emmett being a well-known big game hunter and Major Court-Treant having shortly before the war journeyed through the Sahara to Timbuktu.

An alternative route which was seriously contemplated, though for the use of flying boats only, was the Nile Valley to Victoria Nyanza, and thence by Tanganyika and Nyasa to the Zambesi River and Quelimane, in Portuguese East Africa. The voyage to Cape Town would then have been

continued along the coast. For various reasons this route was abandoned. There was also a suggested "Abyssinian" route and various minor alterations in the main route.

The reasons which led to the adoption of the line so far followed were—(1) The valley of the Nile running almost due north and south forms an excellent guide for the aerial navigator. It also provided means of transportation, and allows either aeroplanes or flying-boats to be used as occasion may require. Also a railway follows the Nile for a great part of the way. (2) The central portion offers several almost equally bad alternatives. That via Lake Kivu is the most direct, but the country between the chain of great lakes is thick bush and swamp, forming an impossible surface for either type of aircraft to use. The line east of Victoria Nyanza is almost as bad, but flying boats could proceed



CAPE-CAIRO AIR-WAY: Map of the route by *The Times*.

direct from Jinja to Mwanza. Thence to Ujiji the country consists of undulating grass-grown plateaux, cultivation forest, and swamp, but a course over comparatively favourable country can probably be drawn. (3) The railway runs along the greater part of the southern section and the country is generally suitable for an aeroplane throughout.

The first party, under Major Long, left Cairo in December. The second and third parties, owing to the dislocation of

steamer traffic, had to proceed via India, No. 2 party making for Mombasa, and No. 3 party for Lorenzo Marques (Captain Shortridge) and Cape Town. The bases were reached about the end of December.

As far south as Khartum Major Long's party had no difficulties; before the New Year the line to Khartum was ready for use, and about three weeks later Brig.-General Herbert was flown there in a Handley Page machine. At Meröe an aerodrome was not cleared, that town being regarded merely as a flying-boat stage. Aeroplanes would naturally follow the railway, which cuts off the loop of the Nile, and proceed direct from Wadi Halfa to Atbara.

South of Khartum, from about 13 deg. north to Broken Hill, about 13 deg. south, the whole line of the country presents enormous difficulties. It was decided to form large permanent aerodromes at intervals of from 400 to 500 miles and leave the intermediate emergency landing grounds until later, and the first big station in this difficult country was to be, if possible, near Kodok, 400 miles south of Khartum. Kodok (Fashoda) is a native village on the Nile, unhealthy and surrounded by a large swampy area. However, Malakal, some 40 miles farther south, the headquarters of the Upper Nile Provinces and a base of the Irrigation Department, offered facilities for an aerodrome on an open grassy plain some few miles to the east of the river. This spot the survey party adopted instead of Kodok.

Between Malakal and Gondokoro, a distance of some 400 miles, the Nile runs through *sudd* country, and though the whole district Rejaf-Gondokoro-Mongalla was thoroughly searched no suitable landing spot could be found. Suggestions as to building an elevated landing ground were made but abandoned on account of the cost. The only solution would appear to lie in the use of the flying boat, the river being of sufficient width to allow of landing whatever the direction of the wind.

The results of the expedition exploring the country of the great lakes is not yet to hand. About Zoka, roughly midway between Gondokoro and Jinja, are plains covered with long elephant grass; to the south it is more undulating, and covered with bushes, scrub and forest. In the rainy season, from March to January, the country is practically a swamp. In the dry season, if the grass were burnt, it would become possible to land machines. About Jinja itself the country is swampy, broken and heavily wooded.

Flying-boats can easily make the journey over Victoria Nyanza to Mwanza, and there are plenty of sheltered inlets along the coast which could be used as intermediate stations. The chief drawback is the frequency and suddenness of severe thunderstorms, with gales and rough water. The annual rainfall is about 60 ins. Waterspouts frequently

occur during rainstorms, and masses of small insects sometimes rise out of the lake, having the appearance of dense clouds.

Between Mwanza and Ujiji the country is good over a stretch of 300 miles. Ujiji itself is in a swampy neighbourhood, but a short distance away is open and grassy country. Here an aeroplane site can probably be found without much difficulty.

The country to the east of Lake Tanganyika is fairly suitable for aeroplanes, but Kituta, at the southern end of the lake, was found by Captain Shortridge's party to be unhealthy, low-lying, swampy and surrounded by hills. It is not suited as a stopping place for aeroplanes, but Abercorn, some 14 miles away, is a much better locality. From Abercorn onwards the country becomes impossible for flying-boats, and the best aeroplane route is via Serenje, across 440 miles of country, to the railway at Broken Hill. This concludes the difficult portion of the route.

It remains to be seen what Major Emmett's party decides is the best course, for all the alternatives are to be examined. A roundabout route, east from Kisumu to Nairobi and thence over the rolling, open lands west of Mt. Kilimanjaro and south along the cart-track to Dadoom is over a district suited to aeroplanes throughout. The cart track continues through similar open country via Iringa to Neu Utengule, Ikomba and Abercorn. This involves a *détour* of at least 400 miles but it may make possible the use of the aeroplane instead of the flying-boat.

Major Court-Treath's party, examining the southern sector, had a relatively simple task allotted to them. It appears that the chief difficulties were to choose aerodromes from the many good sites which existed. In addition, many South African towns made requests that aerodromes might be built in their vicinity. This involved reference to Cairo, and assent has generally been given to the proposal. An aerodrome has been prepared near Johannesburg.

A route in process of development is that from Atbara to Trinkitat, on the Red Sea, and thence via the Farsan and Kamaran Islands to Perim and Aden. This will probably be more used for military than civil purposes, but may become a section of an alternative route via Egypt and the Arabian Coast to India. Major Carr has been responsible for the survey and preparation of this route.

Until full reports of the African Survey parties have been received, one cannot speak definitely about this great air route. It is probable that a combination of flying-boats and aeroplanes will be used at the start of the service. The first machine will probably be flown from Cairo to the Cape in October or November this year.



The Prince of Wales at the Sopwith Works

ON June 5 the Prince of Wales drove down to Kingston to inspect the Sopwith Aviation works. He was received at the chief office by Mr. T. O. M. Sopwith; Mr. R. O. Carey, managing director; Mr. H. P. Margrave, secretary and organising manager; Mr. L. Fowler, factory superintendent; and Mr. H. Mitchell, works manager. On entering the works he was greeted by the workmen with a hammer chorus. In the metal assembling shop the Prince saw the various processes of making bullet-proof shields for the protection of the low-flying trench-fighting Salamanders, and he also visited the experimental shops. The Prince then drove to the new factory at Ham, where he saw the assembling of aeroplanes and inspected completed Salamanders and Dragons with their fighting equipment, the latter being an improvement of the Snipe. The Prince climbed into the pilot's seat of a Salamander, completed and ready for delivery, and Mr. Sopwith explained its details.

Wireless Telephony in Night Flying

THE extraordinary value of wireless telephony for directional purposes in connection with aircraft has been emphasised recently in its relation to night flying. It often happens, of course, that in daylight inter-communication between planes, or between wireless stations and aircraft, is unnecessary, but in flying across country at night the use of the wireless phone will certainly become more and more efficacious.

Some details are now available of a test carried out during a recent night flight from Kenley to Paris in a Rolls-Royce-engined Handley Page. This in no way constitutes a record, but is nevertheless interesting as indicating what is being done as a matter of routine. Wireless telephony has now been definitely adopted as a means of ground to air communication

and *vice versa* on the London-Paris route, and the test in question was made with one of the first machines on this service fitted for the purpose.

Communication was opened as soon as the Handley Page had obtained height, and, after speaking to the ground station, the receiver was turned in and speech was very clearly heard from Kenley. The officer conducting the test emphasises in his report speech quality and strength, and states that he easily recognised the voice as that of an officer known to him. To a distance of about 35 miles the strength of signals was so great that speech from the machine could be clearly heard at Kenley with the receiver laid upon the table. At 50 miles it was still distinct and constant, and was heard until the aeroplane was crossing the Channel and was in touch with Marquise; the first ground station on the French side.

On the return journey conversation between the machine and Marquise was again picked up at Kenley, and the latter station itself was in communication with the machine 30 minutes before it landed.

One of the recent developments in this connection is the production of an aeroplane set which can be converted within a few moments for transmission of either voice or Morse signals.

A New Parachute

At Kenley aerodrome on June 6 comparative tests were carried out with a new parachute designed by Major Taylor, R.A.F., and two other types. Each parachute carried a dummy load representing a man, and the results were approximately as follows:—

Type.	Diameter.	Rate of fall.
Major Taylor's	20 ft.	13 ft. per sec.
Commercial type	28 ft.	15 ft. per sec.
Experimental (R.A.F.)	15 ft.	20 ft. per sec.

AVIATION AS AFFECTING INDIA*

THE idea of the magic carpet came from the East, but the writer of "The Arabian Nights" could hardly have imagined, when he translated the well-known fairy story, that within a comparatively short time, as the history of the world goes, aircraft would be its modern parallel. And, moreover, the East is more suitable for flying than what we know as the West, and in the whole of the East there is no country more suited to aviation than India. Whether the most important factor in flying, meteorology, be considered, or easily made landing grounds, or local supplies of liquid fuel, there can be but one conclusion, namely, that India is an ideal country for aviation. And if incentives are wanted, the land and sea communications of India, both internally and externally, leave much to be desired, and a table of railway speeds, which I give later on, shows how great would be the saving of time, even at comparatively slow air speeds, which the aeroplane should achieve. When one comes to consider also the communications between India and these islands, it is remarkable that certain circumstances, some of them commercial and some of them geographical, prevent anything approaching rapid communication being carried on between Western Europe and Indian ports.

It is a maxim now realised by everyone who has studied aviation, that the longer the distance the greater the gain of the aeroplane over other methods of transport. Whether we take the shortest possible direct route to India—say, 3,000 miles in length—or the longer journey now being used by way of France, Italy, Egypt, Palestine and Mesopotamia—some 5,000 miles in length—in either case many days are saved. As to airmails (carrying airgrams, as I would call them), when daily communication is established, it is safe to prophesy that the present block of several days delay on the Eastern Telegraph Company will be relieved at once. I may remark in passing that the cable companies rather than the shipping companies will feel the competition of airgrams.

When we are considering the question of routes other than those by air, we must realise that the distances from Indian ports to English ports are much lengthened by the peninsulas of Spain and of Arabia, which jut out in such a way as to make the course from the Channel to India a zig-zag one, resulting in the distance by sea, about 6,000 miles, being about double the distance by air direct. Even by the most rapid mail route, *via* Brindisi, Italy, and France, the distance from Bombay to London is nearly 5,000 miles, or 2,000 miles longer than the shortest air route. Then there are the necessary delays of the Suez Canal, say, 24 hours on an average.

In the case of flying between England and India there is now a long but well mapped out route, to some extent provided with insufficiently numerous but regular stages, landing grounds, and spare part depots. With the exception of the flight over the Channel, France and Northern Italy, no serious climatic disadvantages exist. As regards Imperial or international control, the present air routes to India pass, with the exception of France, Italy and Crete, entirely under the direction of the British Empire. Moreover, when India is reached, it is by no means a dead end, to use an old railway phrase, as some may think. India is half way between London and Australia, and beyond India lie many important parts of the Empire, such as Australia and New Zealand, Burma, the Federated Malay States, British Borneo, and Hong-Kong. The winter conditions in Siberia and Thibet will preclude regular flying from China and the East to Europe for many years to come, and the route south of the Himalayas is therefore certain to be used. The Northern Plains of India, from Peshawar to Calcutta, therefore, will become one day one of the world's greatest airways. I consider that Heliopolis (Cairo) will be the most important single centre of air transport for the Old World—Europe, Asia and Africa—for thence will radiate services to East, Central, and South Africa on the one side, and on the other to India and countries beyond. But next to Cairo in importance will be some Indian station for reception of all mails east of India to places ranging from Vladivostock to New Zealand.

As regards internal communications, India is a country of vast distances and of bad communications. It is inadequately provided with railways and roads. The average train speeds before the war, even including the usual one mail train each way a day, were very slow compared with ordinary European or American standards.

I set out in a table at the end of this part of the paper the time taken by the fastest Indian trains in October, 1918, between certain important centres, and also the time which would be taken by aeroplanes, at the low average speed of 70 m.p.h.

Another special aspect of flying within India itself should be considered, namely, if it is possible to set up regular passenger services between hill stations and the plains below, except, perhaps, during the months of November, December and January. Such services would give over-worked officials, civil and military, and their families, suffering from the effects of heat, an easier chance of constant recuperation in the hills for short periods, or even week-ends, without so large a proportion of time being absorbed as at present, in slow railway or road journeys. An illustration of this exists in the case of Kashmir. Rawal Pindi, the railhead for the Kashmir road, is 200 miles from Srinagar. Along this road, even in a powerful motor car, high speeds are impossible, and, as a rule, most travellers have to put up with the delays and inconveniences of tongas, in which the journey generally takes two or even three days. An aeroplane, on the other hand, would cover the distance from the town of Jhelum (on the main line of the N.W.R.) to the Maidan, outside Srinagar, an ideal landing ground about 80 to 90 miles distant, in a little over an hour. From the same point to-day by rail and road, the time taken by the ordinary passenger exceeds 50 hours, even if a motor car is used. If Kashmir is to become, in the future, more and more, the playground and health station of the British race in Northern India during the summer months, such a passenger service by air would prove of immense value. The highest point through the Ferozepore nullah to be crossed over the intervening range, the Pir Panjal, is not higher than 8,000 ft., an altitude easily exceeded by all our larger bomb-carrying planes to-day, a type which is probably the forerunner of the passenger-carrying planes of the future.

We must also consider other military and civil stations at high altitudes, such as Quetta. Those condemned to live during the summer months at stations in or near the Indus Valley, between Karachi and Mooltan, could in a few hours find themselves in the far cooler atmosphere beyond the Bolan Pass, or perhaps at a new hill station, say at Rusmuk in the Mahsud country. As regards Simla and other Himalayan hill stations, the problem of landing grounds is an admittedly difficult one. At Simla there is perhaps one landing ground possible, namely, Annandale, if it were improved for the purpose. But, on the other hand, very soon aeroplanes will be able to land on an area of ground equal to about four to six tennis lawns, and the Government of India could easily make, in many places, artificial small flat spaces ending in ramps.

So long as external mails are conveyed by sea, and arrive at and depart from Bombay, the mail service to and from that port can be much accelerated, compared with the present train service. From Bombay to Calcutta, by the shortest railway route, is 1,223 miles, a journey of about 46 hours.

As regards the control and organisation of flying in India, I have heard it argued that the Government of India should allow no private ownership of machines, and that no Indians should be licensed to fly. Though it is obvious that care must be taken that the planes owned by any individual are not capable of being used for hostile action against the community, such as bombing, or fitted with apparatus for machine-gun use, it seems to me very unwise to try to prevent the progress of aviation among any citizens of the Empire, Indians or any other peoples, who are keen to fly and able to possess their own machines. I would suggest, however, that at first landing grounds should be Government owned, but let to private companies if necessary, and regulations must be made to prevent any cause of offence arising from the use of aeroplanes. For instance, considering the excitability of Eastern crowds, it would be dangerous to allow flying to take place over sacred places, large towns, or over religious processions.

In entering India from outside, landings should only be permitted on Government controlled grounds, or otherwise smuggling may become troublesome. Pilots and their machines must be numbered and licensed, as suggested by the proposed international agreement.

I may mention that several of the great chiefs in India are already keen on aviation, and shortly we may see maharajas and rajas arriving in royal state at Delhi Durbars in gorgeously fitted aeroplanes, and relieving the over-congested Indian railways of their special trains or coaches.

* Extracts from Paper read by Brigadier-General Lord Montagu of Beaulieu, C.S.I., V.D., F.R.Met.Soc., A.Inst.C.E., A.I.Mech.E., before the Indian Section of the Royal Society of Arts on June 5, 1919.

An aeroplane service from Bombay should cover the distance in about 17 hours, a saving of about 30 hours each way.

I suggest that the most important internal routes in India are :-

1. Bombay, *via* Delhi and Lahore, to Peshawar.
2. Bombay to Calcutta.
3. Bombay to Madras.
4. Bombay, *via* Mysore, to Colombo.
5. Bombay, *via* Baroda, to Karachi.
6. Calcutta to Madras.
7. Calcutta, *via* Cawnpore, to Delhi.
8. Madras to Colombo.
9. Madras, *via* Hyderabad, to Jhansi, for Delhi and the north.
10. Peshawar, *via* Indus Valley, to Quetta and Karachi.
11. Delhi, *via* Bikaner, to Karachi.

	Miles.	Hours.	M.P.H.	Aeroplane (70 m.p.h.) (Hours.)	Time saved. (Hours.)
1. Bombay to Peshawar, <i>via</i> Delhi—					
(a) G.I.P. and N.W.R. ..	1,542	55	23	22	33
(b) B.B. and C.I.R. ..	1,450	53	27½	20½	32½
2. Bombay to Karachi, <i>via</i> Baroda ..	992	46	21	14½	31½
3. Bombay to Calcutta—					
(a) E.I. and G.I.P.R. ..	1,349	43	31	19½	23½
(b) B.N. and G.I.P.R. ..	1,223	46	26½	17½	28½
4. Bombay to Madras ..	794	36	22	11½	24½
5. Calcutta to Madras ..	1,030	41	25	14½	26½
6. Calcutta to Delhi ..	903	28	32½	12½	15½
7. Madras to Colombo ..	700	35	20	10	25
8. Madras to Jhansi Junc- tion, <i>via</i> Dhond and Manmad ..	1,314	64	20½	18½	45½

Generally speaking, the less Government control there is over any new development in the world the better. The heavy, inelastic, and clogging hand of Government has rarely done anything in the history of this country to encourage new developments, and the Government of India, by its composition and nature, can never be extravagantly progressive. I would say, at the risk of being officially censured for daring to doubt its divine wisdom, that the Government of India had better encourage private enterprise in aviation rather than endeavour to manage all air services and operation itself.

How great meteorology concerns flying has not yet been generally realised. In India there are two distinct climatic periods in every year. There is the tranquil period of the north-east monsoon from October to May, and the more disturbed period during the south-west monsoon from the end of May to October. Owing to the use of free high altitude balloons we have been able recently to ascertain that the south-west current is comparatively shallow, rarely over 10,000 ft. in depth, and that above the clouds, which probably extend to about 8,000 ft., there is generally a clear sky. This fact may rob the monsoon period of many of its drawbacks. In winter, on the other hand, conditions are curiously dissimilar to the summer conditions. A light north-easterly wind blows over the surface of the Indian peninsula until a height of about 15,000 ft. to 20,000 ft. is reached. At that altitude a strong west wind, sometimes attaining a speed of 100 miles an hour, is encountered. As regards other weather conditions, dust storms are dangerous at times, but rarely affect the weather higher than 4,000 ft. to 5,000 ft. Dust devils, as they are called, those small erratic whirlwinds of local violence, are never, so far as my flying experience in Indian goes, felt above 3,000 ft. As regards the south-west monsoon period and the intense humidity prevailing then, no doubt special arrangements will be made to insulate all the electrical and wireless connections on machines. I have now called your attention to these insignificant drawbacks of the Indian climate, and it only remains for me to state that from September to June, on nine days out of ten, the weather is perfect for flying, the visibility exceedingly good, and the average air currents under 10 miles an hour in velocity.

It may interest you to know that in recent conversations with the Postmaster-General in India, Mr. Geoffrey Clarke, I learned with pleasure that he was strongly in favour of air mail services being started in India at once, and hoped that

contracts would be sanctioned with private commercial companies rather than any attempt made to work direct through the R.A.F. I am sure that no disparagement was intended in his mind as to the capabilities of the R.A.F. to undertake any work anywhere. But from many points of view a commercial company undertaking air mail services would be in a freer and more favourable position, while the risks inseparable from early development would not be borne by the Government of India. The Government of India should, in my opinion, make contracts with groups or companies really capable of carrying out their contracts in the same way as the sea mails are now confided to the care of the P. and O. Company.

I am often asked how soon passenger services by air will be established between India and England. In reply I would say, first of all, let us establish for at least a year regular postal services, for the experience gained thereby will avoid loss of valuable lives, and the discouragement which is bound to come when only a proportion of the hopes we set out with are realised. Moreover, I think it will be a long time before it is commercially profitable to fly passengers, on account of their weight compared with mails. The world is ready to pay much more per ounce for the rapid conveyance of information and news than it is prepared to pay for the transport of human bodies.

But, of course, a year hence, if money is no object, anyone will be able to fly between England and India, and in time the fares will be much reduced.

I have worked out the following table to show the truth of this assertion. Taking the average load of a man with a very limited amount of luggage as weighing 12 stone, this weight comes out at 2,688 oz. We will assume that airgrams pay at the rate of 2s. 6d. an ounce. If 2,688 oz. be taken in the form of postal matter we get a return of £336. Now a man would have to be very rich, or in a great hurry, to pay £336 for a passage between India and England, and the price is a prohibitive one to ordinary persons. At the price of 2s. 6d. per ounce of airgrams, the conveyance of a ton would return £4,480, and the aeroplane flying mails at this rate between England and India would, therefore, earn about £1 per mile by the present route. Against these receipts I venture to put the expense at about 10s. a mile, including all ordinary expenses, depreciation, and interest at 7½ per cent. on capital. As regards passengers only, it takes only thirteen and a third men to weigh a ton at an allowance of 12 stone for each man and baggage, and one can hardly imagine 13 men, apart from the third of a man, paying collectively £4,480 for a passage between Karachi and London.

It is clear, therefore, that at first the main payable traffic by air, must consist of what the Post Office calls "mail matter," and I am sure that the commercial world in India, here and elsewhere, when services become regular—the most important point of mail services—and rapid, will use air services very largely.

It is interesting to note that about 5,000 words can be written on thin foreign paper and, with envelope and stamp, weigh just under an ounce in weight. Any such letter up to 5,000 words in length could be taken the 5,000 miles, the present route, in 48 hours, and for 2s. 6d. A cablegram, on the other hand, of the same length would cost at present prices of cabling a rupee a word. It would take four to five days as a minimum: it would probably be somewhat mutilated in transmission, and cost £416, as against 2s. 6d.

The subject of flying, apart from mails, to India and in India, is so large a one that I must not let myself go into all the branches and aspects of it. But as to mail services to England, I would like to bring to your notice the fact that the present war route, *via* Cairo, Damascus, and Mesopotamia, is by no means the most direct, and that something like 1,000 miles would be saved by following a direct line from Cairo *via* Akabah to Basra, the distance being only 790 miles between Cairo and Basra.

As my old friend General Seely, the Minister now in charge of the R.A.F., is in the chair to-day, I would ask him to remember that India deserves some of our best pilots and machines. The time is past, also, when India should be looked upon as the dumping ground for inferior aeroplanes, and I may remark that when I left India about two months ago we had not a single machine there which could have flown with safety over any height or pass exceeding 8,000 ft. The bombing, therefore, of Cabul, the capital of Afghanistan, from Parachinar, the closest point in our territory, only 75 miles distant, was impossible, because there was no machine in India which had "ceiling" enough to get over the intervening ranges, especially the Peiwar Kotal, 15 miles west of Parachinar, which forms the frontier between British territory

and Afghanistan. Bombing has had to be carried out, therefore, from the neighbourhood of the Khyber Pass, a much longer distance. I would like also to put before you some of the problems we have to face in India with regard to engineering and construction. Under the intense light and heat of India, there are four special problems of engineering construction which we have yet to solve:—

1. Engines that will not overheat in temperatures up to 180° Fahr. in the sun, and 125° Fahr. in the shade.
2. Wood that will not get "short," as it is called, and perish or warp in a very dry climate.
3. Fabric that will not deteriorate and become weak.
4. Dope that will withstand extremes of heat and cold, and the destructive effect of intense light.

I am inclined to think that, as our knowledge of dirigibles improves, and we have learned much already, dirigible balloons will possibly be preferred as a means of conveyance of mails and passengers by air between England and India without any intermediate stop. A dirigible has already been 101 hours in the air without coming down, and I may mention that 2,500,000 miles were covered by dirigibles during the war with comparatively few mishaps. While we must all admit that the speed of the fastest dirigible is at present about half that of the fastest aeroplane, at the same time a continuous flight of 3,000 to 4,000 miles is already possible; time is saved by the absence of stops en route; and the dangers of sudden breakage or forced descent, or disaster in case of engine failure, are small.

I think, however, it may interest you to see how the journey by aeroplane might work out on the basis of 10 stages.

Of course, more stages will mean a greater number of pilots and planes being employed, and therefore the shorter the stages the more expensive the establishment of the services.

England to India.—Distances between Landing Grounds.

		(Approximate.)	Miles.
Section 1.	London to Paris	230
	Paris to Lyons	280
Section 2.	Lyons to Turin	200
	Turin to Rome	350
		or	
	Lyons to Frejus	220
	Frejus to Rome	450
Section 3.	Rome to Otranto	320
Section 4.	Otranto to Crete	480
Section 5.	Crete to Cairo (Heliopolis)	520
Section 6.	Cairo to Jerusalem	275
	Jerusalem to Damascus	150
Section 7.	Damascus to Hit	366
	Hit to Baghdad	100
Section 8.	Baghdad to Basra	300
Section 9.	Basra to Bushire	250
	Bushire to Bandar Abbas	350
Section 10.	Bandar Abbas to Karachi	600

Finally, in all our plans for the establishment of air services all over the Empire, we must remember that plenty of good aircraft in peace means a reserve of good aircraft for war. Whatever the future of the world holds for the British Empire we must see that it is as supreme in the air in the coming years as it has been in the past, and is now, on the sea.

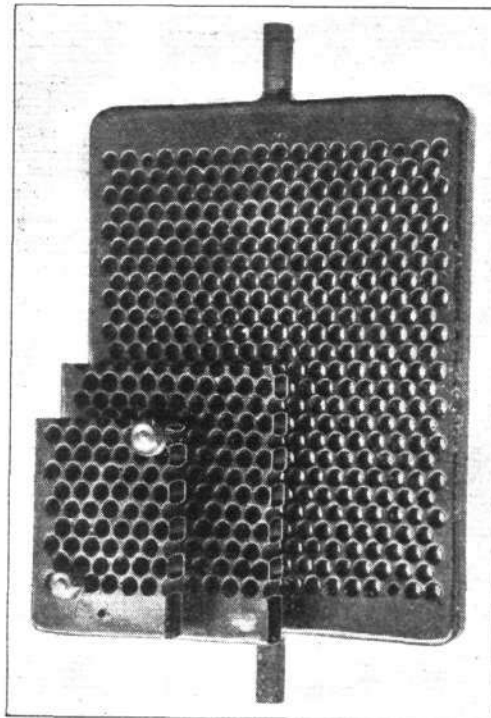
A JOINTLESS HONEYCOMB RADIATOR

How little sometimes separates failure from success has been well exemplified recently by the result of Mr. Hawker's attempted Transatlantic flight. But for the obstruction in the water-circulation system on which the efficient cooling of his engine depended, it is in the highest degree probable that what was such a glorious failure would have proved a full realisation of his hopes. It is credibly reported that the obstruction in question was due to small particles of the solder which entered into the construction of the radiator breaking away and fouling the filter. Thus is proved once again the moral of the little nursery ditty respecting a kingdom which was lost for the want of a horse-shoe nail—viz. that from seemingly insignificant causes great effects may ensue.

In practically all radiators the joints are soldered, and in the honeycomb type especially does this fact prejudice against reliability, since in this case the number of joints is almost infinite. True, there are some radiators which are almost devoid of soldered joints, and at least one which is entirely so. The latter, also, is of the true honeycomb type—the most efficient of all—and consequently would appear to have everything to recommend it from all points of view, except, perhaps, that of cost of production—for, as compared with that of the usual radiator, its construction, we should judge, cannot be other than expensive, though we have no definite figures upon which to go.

Our illustration shows the radiator in question, which is constructed of pure copper by electro-deposition, and is, therefore, in one piece; consequently, trouble from leaks or internal obstructions should be entirely absent. We understand that radiators constructed on this principle—which is the invention of Mr. C. W. Denny, A.M.I.E.E.,

of 22, Edwardes Square, Kensington, London, W. 8—can be made to any size or shape.



A one-piece
honeycomb
radiator:
No soldered
joints what-
ever enter
into its con-
struction,
which is
effected
by electro-
deposition

CIVILIAN FLYING AT HENDON

WITH reference to the report, in our June 5 issue, of an accident to a "Kangaroo" biplane, we have received the following letter from Mr. Claude Grahame-White, Managing Director of the Grahame-White Co., Ltd. :—

"I have just read your interesting report in the current issue of *FLIGHT* of the reception accorded to Mr. Hawker and Commander Read at the London Aerodrome, Hendon, on Saturday and Sunday last.

"I am sure you are desirous of reporting accurately the causes of, and circumstances surrounding, any aircraft accidents, and, therefore, I beg to give you the facts of the case with which your comments are at variance.

"The accident was caused not, as suggested in your report, by any negligence or desire to stunt or 'show off' on the part of the pilot, but by the sudden failure and cutting-out of the port engine, just as the machine left the ground. The machine was so low that by the time the pilot had throttled down the starboard engine, the machine had banked over, and the

left wing tip struck the ground. Had the engine cut out at a higher altitude instead of at the moment of taking-off no accident would have happened.

"We have, since 1910, carried thousands of passengers at Hendon on all types of machines and under all weather conditions and we are very proud of our record of public safety."

"I should like to mention that all our pilots are engaged on the strict understanding that no aerial acrobatics are permitted under any circumstances when carrying members of the public, and I refuse daily large numbers of passengers who desire to pay specially high fees for looping and other stunts."

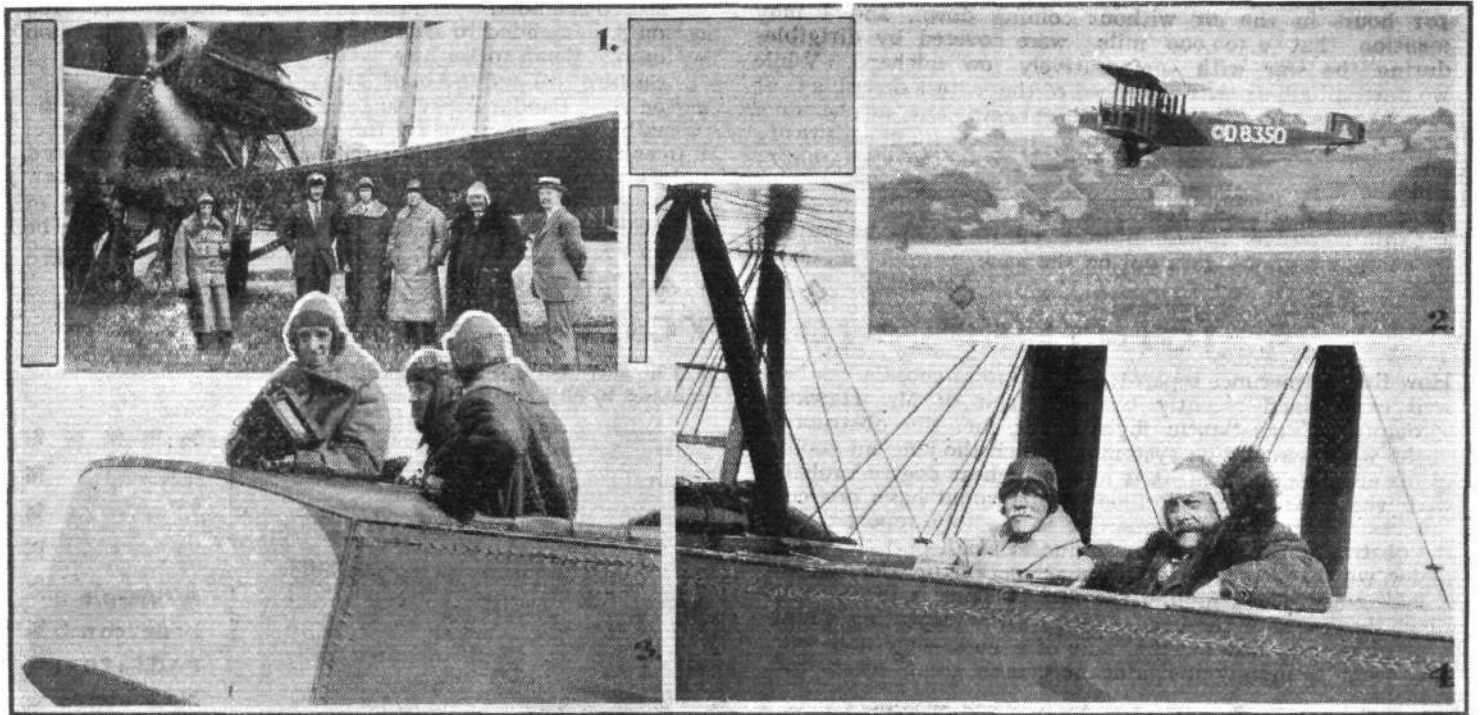
[We are glad to have this explanation, and to note the principles upon which Mr. Grahame-White engages his pilots. The absence of accidents at the London Aerodrome is undoubtedly a "record," and for that reason we should very much regret to see this "record" jeopardised by any unnecessary chances being taken.—ED.]

LONDON AND BOURNEMOUTH AIR SERVICE

FRIDAY last saw the opening of the aerial passenger service between London and Bournemouth, which has been inaugurated by the Bournemouth Aviation Co. The machine used was one of the twin-engined Handley-Page biplanes, and the pilot was Lieut. Walker. Four passengers were carried, and, as was fitting for the occasion, three of these were Mr. E. E. Bishop, Mayor of Bournemouth, ex-Mayor Alderman Robson, and Mr. Herbert Ashling, the Town Clerk. FLIGHT photographer made the fourth passenger, and some of the photographic records of this trip which he was able to secure appear in this issue.

Cricklewood aerodrome was left at 4.15 p.m. (a little later than was arranged), and flying at various heights up to 2,000 ft. the machine made a steady, uneventful journey, in ideal

—if somewhat soporific—weather, arriving at Bournemouth aerodrome at 6 p.m. Most of the time visibility was poor, owing to heat mist, but many well-known landmarks—such as Brooklands, Winchester Cathedral, Southampton Docks with its large liners, etc.—were nevertheless spotted. Arriving over Bournemouth, a tour of inspection was made of the "front" from Southbourne to Bournemouth West Cliff before landing in the aerodrome. On landing, the Mayor received a very hearty welcome from the many hundreds of people who had gathered to await his arrival. As a sample of air travel the trip was a delightful experience, and we can well believe that the vogue of tripping to Bournemouth by the air-way should be very pronounced.



"Flight" Copyright

CRICKLEWOOD-BOURNEMOUTH BY AIR : Last week end the public air-service between Cricklewood and Bournemouth by Handley Page aeroplane was inaugurated, when "Flight" representative joined in the initial journey. The above photographs show—(1) One of the H.P. service machines with propellers ticking over and the passengers. Left to right, "Flight" representative, Lieut. Walker (the pilot), Mr. H. Ashling (Bournemouth Town Clerk), Ex-Mayor Alderman Robson, Mr. Bishop, Mayor of Bournemouth, and the Cricklewood Aerodrome representative. (2) The H.P. starting on its first journey to Bournemouth. 3. In the nose of the H.P., "Flight" photographer, Pilot Lieut. Walker and Mr. Ashling. (4) The Ex-Mayor of Bournemouth, Alderman Robson, and Mayor Mr. E. E. Bishop, in their seats ready for the start

Transatlantic Items

LIEUT. CONRAD H. BIDDLECOMBE, R.A.F., is the new navigator of the Martinsyde machine. Capt. C. W. F. Morgan, R.A.F., arrived home on June 9.

The N.C. 4 is to be returned to the United States by ship, and will probably find a resting-place in a national museum.

A report from St. John's states that the under-carriage of the Sopwith aeroplane, which was dropped by Mr. Hawker as the machine passed over the coast, has been brought into Presque Harbour, on the west side of Placentia Bay.

The Vickers machine made a trial flight, lasting 45 minutes on June 9, and Capt. Alcock landed the machine at his new aerodrome to the north-west of St. John's.

New Prizes for Long Distance

FOR the first non-stop flight from Paris to New York, or vice versa, during the next five years, Mr. Raymond Orteig, a well-known hotel proprietor, has offered through the Aero Club of America a prize of £5,000. Any aviator of Allied nationality is eligible to compete for the prize.

Mr. J. H. Ince, of Venice, Cal., has offered prizes aggregating £10,000 for flights from California to Australia. He offers £7,000 to the first entrant to land in Australia, and £2,000 will be paid to the first competitor who fails to reach Australia but who gets safely to the Hawaiian Islands.

In the event of no one reaching Hawaii £1,000 will be paid to the aviator making the best show.

Portuguese Government offers a Prize

ON the suggestion of the Minister of Marine the Portuguese Government has decided to offer a prize of 20 contos of reis (about £4,000) for the first Brazilian or Portuguese aviator who succeeds in flying from Lisbon to Rio de Janeiro. A time limit of 168 hours has been fixed.

A Woman's Height Record

Flying a small Caudron G.3 biplane, Baroness de la Roche, during a flight which lasted 1 hr. 49 mins., went up to an altitude of 3,900 metres (12,870 ft.), which is claimed, in Paris, as a woman's record.

Miss Ruth Law has cabled from New York claiming that in September, 1917, she went up to 4,240 metres.

Progress in Aviation during the War

THE Wilbur Wright Lecture of the Aeronautical Society will be held at the Royal Society of Arts on June 18 at 8 p.m. This year Mr. Leonard Bairstow, F.R.S., will be the lecturer, and will take as his subject "Progress in Aviation during the War Period—Some Items of Scientific and Technical Interest."

AIRS FROM THE FOUR WINDS

WHAT a bit of luck that "no planes" over the Derby order was promulgated in good time. Else had any machines been stunting around the course we wonder what would have been said by one and sundry as to the cause of Panther's eccentricities. For future Derbys, when possibly flying to Epsom may be permitted, the fact that the favourite has been known to indulge in erratic behaviour might well be noted.

OLD sayings modernised :

Ancient : "Sending coals to Newcastle."
And Modern : "Sending 'Kangaroos' to Australia."

It certainly would appear to be a bit of a handicap to local farmers and others when the Air Ministry are paying wages of over £4 a week to totally unskilled labourers at Biggin Hill Aerodrome, whilst the rate in the district for agricultural labour—and skilled at that—is 39s. 6d. per week. Hardly wonder that Godstone Rural District Council has entered a protest.

"HUGE British Zepp. Airship half as big again as R34. Sir William Beardmore, head of Messrs. William Beardmore and Co., Glasgow, made the following announcement yesterday that the firm has on hand two other airships, one the same size as £34 and another 50 per cent. larger—that is, having three million cubic feet capacity."—*Evening Paper.*

Now if some one will work out the present exact pound sterling exchange we might speculate in half a dozen of "thes ame" ourselves.

FROM the Chairman of the Camera Club, Mr. S. M. Ward, comes a letter to the Press, containing the details of a highly valuable campaign which the club has undertaken for the photographic survey of London—we hope to include what evidence still remains of the aerial work of the Huns. Might we suggest that to make this survey of even more historical interest, it might also embrace an aerial survey of London as seen from above, as by way of example the very remarkable photograph of Charing Cross and the district recently on view at the R.A.F. Exhibition in colours. To a large extent, no doubt, this aerial "survey" already exists in the official archives and only requires collating to render it intelligent to the inhabitants of the metropolis. We commend the idea to the Camera Club.

In the meantime here is Mr. Ward's appeal :—

"The Camera Club hopes, should sufficient support be forthcoming, to carry out a photographic survey of London

during the present year, with the object of providing, for the benefit of future generations, a complete pictorial record of the appearance of London in the year 1919. Such a record should comprise, not only buildings and monuments of historical interest, but also as much as possible of ordinary sites and streets of which so little memory remains after the rebuilding that takes place with such rapidity in these days. It is only necessary for a man of middle age to attempt to recall the London of his youth for the value of this scheme to become apparent.

"All the prints would be of standard size and process, and would be arranged and mounted by the Camera Club, which would undertake the general organisation of the scheme. To carry it out successfully a small fund will be required to meet expenses. The Camera Club already has started the fund amongst its members, but will be glad to receive contributions from others who are interested in the scheme. When the survey is completed it is proposed to store the prints at the London Museum. A leaflet describing in detail the whole undertaking will be sent to anyone who sends a stamped addressed envelope to the hon. sec., Photographic Survey of London, The Camera Club, 17, John Street, Adelphi, W.C. 2."

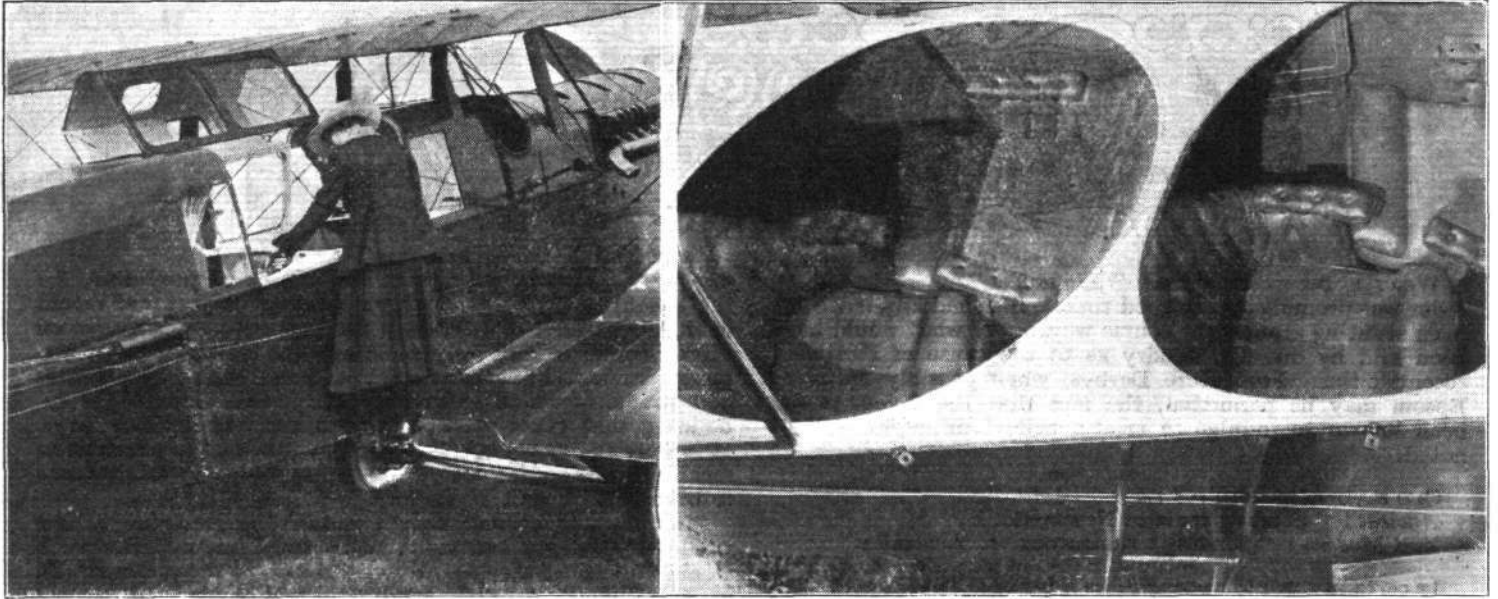
WHAT is the meaning of the following highly suggestive item in the report by the *Bedford Standard* of the proceedings at the May monthly meeting of the Bedford Town Council? The item upon which we raise our query we print in italics :

"AERIAL JOY RIDES FOR BEDFORD?—Two communications had been received with regard to schemes for the provision of facilities for aerial flight in Bedford. These were read by the Town Clerk. One was from the Aerial Flight Organisation Department, offering to make all arrangements for passenger flying if the Council would pay £15 per day towards the expenses. It was pointed out that the scheme, besides other advantages, would provide a very effective advertisement for the town, and it was suggested that 2s. gate money might be charged, and that as a start 14 days' engagement be entered into. *The other scheme came from No. 7 Training Squadron, R.A.F., King's Lynn, offering to supply pilots, ground staff, machines, &c., for aerial transport in Bedford.*"

BOTH communications were referred to the Public Works Committee and from there to the Finance Committee, so that how the propositions will eventuate is at present unknown. But in the meantime it might be interesting if some announcement could be made as to whether the idea emerging in the second scheme is the forerunner of official competition for running local shows generally, as against private enterpri-

"Flight" Copyright
At the Auction Sale
on Monday week
of aeroplanes and
parts by the Air-
craft Disposal
Board: At the
moment of our
snap, a "strut"
lot was being offered—a sample,
as may be seen,
of the 500 to 750
struts being held
up.





THE AIRCO (DE H.) 16.—On the left a lady passenger is seen, on the side ladder, entering the cabin, and, on the right, a view looking into the cabin, showing how the four seats are arranged

The following extract from a Dundee daily has been sent us by a correspondent:—

"SOME" ENGINE.

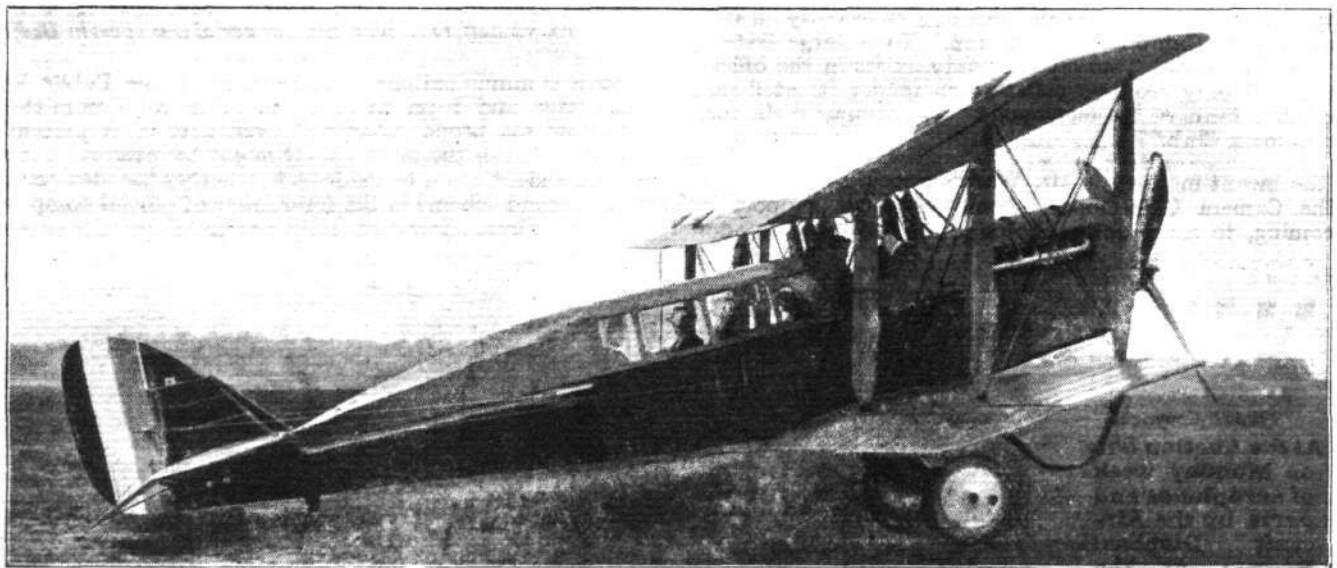
"Speaking of the gallant attempt to cross the Atlantic in the air, an evening paper remarked that Mr. Hawker would have with him Commander Grieve to share 'the danger and the monotony of the 2,000,000 revolutions of the propeller.'

"That Rolls Royce engine was a much more wonderful machine than anyone could possibly have imagined if its propeller could make *two billion* revolutions in crossing the Atlantic, in say, 24 hours. To accomplish that it would have to turn over 23,000,000 times a second. Even if it revolved only 1,000 times a second it would need over 63 years to aggregate *two billion* revolutions. We get some definite idea of what a billion is when we remember that in the 5,926 years that have elapsed since the creation (according to the Hebrew chronology) not one-fifth of a billion seconds have ticked away."

As we are not sufficiently acquainted with Scotch, perhaps some reader could send us a translation of the *Evening Post's* comments, to enable their facts to be appreciated by poor southerners. Or is it a case of shell-shock?

THIS is not an age of reverence (repress the apprehensive start, this is not going to be an editorial!), but it really does seem to be "coming it rather strong," this project to provide "aerial flips over the battle-fields of France" at so much per head. It may be that the lyric tendencies of the commentators in the daily press have run away with them, at least, let us hope so.

THE French are indignant over the official support lent by the Dutch authorities to the project of the estimable M. Fokker (an ardent supporter of Germany throughout the War, at whose disposition he put his patents), which is to build a large aeroplane factory at Amsterdam. (The trade-mark of this Boche by adoption shows an eagle holding in his claws a German machine gun.)



SIDE VIEW OF THE NEW AIRCO (DE HAVILLAND) PASSENGER CARRIER.—As the illustration shows, there is seating accommodation in the cabin for four passengers. The engine is a 350 h.p. Rolls-Royce, and with full complement of passengers the machine has a speed of 126 m.p.h. Mr. M. D. Manton is seen in the pilot's seat



Aerial Mails in Columbia.

TENDERS are being invited by the Government of Columbia for the conveyance of mails by aeroplane, or airship between Bogota and Barranquilla, between Bogota and Pasto, and between Bogota and Cucuta; on each route there will be several landing points. The contractors will have to be responsible for the mail matter conveyed in their

machines, except in cases of fortuitous mishaps, duly proved A fine up to \$5,000 is to be paid by the contractors should they fail to transport the mails by air. The first contract will be for four years, and may then be renewed from year to year. Tenders have to be sent to the Colombian Post master-General by next September, and it is hoped to start the services in June of next year.



HONOURS

The following is the remainder of the list of honours for the Royal Air Force published in a special supplement to the *London Gazette* on June 3. The first part was printed in our last issue.

Order of the British Empire

The King has been pleased, on the occasion of his Majesty's Birthday, to give orders for the following promotions in, and appointments to, the Most Excellent Order of the British Empire, in recognition of distinguished services rendered during the war:—

D.B.E. (Military Division)

Comdt. Mrs. H. C. I. Gwynne-Vaughan, C.B.E., Women's R.A.F.

C.B.E. (Military Division)

Royal Air Force

Lieut.-Col. (A./Brig.-Genl.) R. K. Bagnall-Wild, C.M.G. (R.E.); Lieut.-Col. B. C. Bartley; Col. A. M. Bent, C.M.G. (R.M. Fus.); Lieut.-Col. the Hon. J. D. Boyle, D.S.O. (Rif. Bde.); Lieut.-Col. C. S. Burnett, D.S.O. (H.L.I.) (Egypt); Col. (A./Brig.-Genl.) B. H. H. Cooke, C.M.G., D.S.O. (Rif. Bde.); Lieut.-Col. (A./Col.) E. H. Davidson, O.B.E., M.C. (G. Highrs.); Col. (A./Brig.-Genl.) B. C. H. Drew, C.M.G. (Ind. A.); Lieut.-Col. J. Dunville, O.B.E.; Maj.-Genl. E. L. Ellington, C.B., C.M.G. (R.A.); Lieut.-Col. (A./Brig.-Genl.) P. L. W. Herbert, C.M.G. (N. and D. Regt.) (Egypt); Lieut.-Col. (A./Brig.-Genl.) C. G. Hoare, C.M.G. (Ind. A.) (Canada); Lieut.-Col. C. F. Jenkin, M.B.E.; Lieut.-Col. (A./Brig.-Genl.) C. C. Marindin, D.S.O. (R.A.); Maj. (A./Lieut.-Col.) E. P. A. Melville, O.B.E. (Ind. Army); Lieut.-Col. (A./Brig.-Genl.) R. H. More, C.M.G. (Imp. Yeo.); Lieut.-Col. (A./Col.) R. H. Mulock, D.S.O. (I. Force) (France); Lieut.-Col. (A./Brig.-Genl.) C. L. N. Newall, C.M.G., A.M. (Ind. Army) (I. Force) (France); Maj. (A./Lieut.-Col.) E. Osmond (Flanders); Col. (A./Brig.-Genl.) D. Le G. Pitcher, C.M.G., D.S.O. (Ind. Army) (France); Lieut.-Col. R. E. M. Russell, D.S.O. (R.E.) (Egypt); Maj. (A./Lieut.-Col.) W. J. Ryan, O.B.E. (A.S.C.) (I. Force) (France); Lieut.-Col. (A./Col.) S. E. Smith, O.B.E. (Glouc. R.); Col. (A./Brig.-Genl.) O. Swann, C.B. (Mediterranean); Lieut.-Col. A. Sykes, O.B.E. (R. Ir. Fus.); Lieut.-Col. (A./Brig.-Genl.) J. G. Weir, C.M.G. (R.F.A., T.F.); Lieut.-Col. H. V. Wells; Col. (A./Brig.-Genl.) K. Wigram, C.B., D.S.O. (Ind. Army) (France).

D.B.E. (Military Division)

Capt. (A./Maj.) P. Adams; Capt. (A./Maj.) S. W. Addison (Aus. F.C.) (Palestine); Maj. V. A. Albrecht, M.C. (Manc. R.) (I. Force, France); Maj. R. D. Anderson (R. Defence Corps); Maj. J. O. Archer (R.F.A.S.R.) (Egypt); Capt. (Hon. Maj.) W. B. Armitage (Lanc. Fus.); Capt. (A./Maj.) J. E. Arrol-Hunter; Capt. (Hon. Maj.) W. R. G. Atkins (Egypt); Capt. (A./Maj.) C. H. Awcock (R.G.A.) (Italy); Lieut.-Col. J. E. A. Baldwin, D.S.O. (8th Hussars) (I. Force, France); Capt. (A./Maj.) J. H. Banks (A.S.C.); Maj. (A./Lieut.-Col.) G. D. Bateman; Capt. (A./Maj.) P. M. Beachcroft (R.A.); Lieut.-Col. W. D. Beatty (R.E.); Maj. V. A. Beaufort, M.C. (Devon R.) (Egypt); Capt. (A./Maj.) C. H. Bell; Capt. (A./Maj.) A. Belton (R. Fus., S.R.); Capt. (A./Lieut.-Col.) H. R. Bently (Ches. R.); Chaplain Rev. R. S. B. Berry (I. Force, France); Maj. P. Bishop, M.B.E.; Capt. (A./Lieut.-Col.) J. D. Blyth (R.E.); Lieut.-Col. C. Bovill (R.A.) (Egypt); Lieut.-Col. the Hon. C. M. P. Brabazon (I. Gds.); Lieut.-Col. C. R. S. Bradley (I. Army); Capt. (A./Lieut.-Col.) J. S. T. Bradley (M.G.C.); Lieut.-Col. (A./Col.) E. F. Briggs, D.S.O.; Maj. (T./Lieut.-Col.) H. C. Brinsmead, M.C., 24th Bn., A.I.F.; Capt. (A./Maj.) E. J. Briscoe (France); Maj. R. V. C. Brook; Maj. P. R. Burchall; Maj. L. A. Burrows (Midd'x R.); Capt. (A./Maj.) V. Duxton (Leic. R.) (Mesopotamia); Lieut.-Col. C. F. Campbell, C.I.E. (I. Army); Lieut.-Col. H. Campbell, D.S.O. (R. Fus.); Capt. (A./Maj.) G. B. Chamey; Lieut.-Col. A. H. Cheate; Capt. (A./Lieut.-Col.) A. J. Child, M.C. (Lond. R.) (France); Maj. (A./Lieut.-Col.) A. J. Clark (Lond. R.) (France); Maj. H. Cockerell; Lieut.-Col. R. H. Collier, D.S.O. (I. Force, France); Capt. (A./Lieut.-Col.) L. B. Cook; Maj. F. E. Cooper; Maj. J. W. Cordingley; Capt. (A./Maj.) L. H. B. Cosway (France); Lieut.-Col. L. T. Courtney (R.M.L.I.); Lieut.-Col. (A./Col.) A. D. Cunningham; Maj. (A./Lieut.-Col.) M. O. Darby; Capt. (A. and Hon. Maj.) J. H. Davies (Ches. R.); Capt. (A./Lieut.-Col.) M. Deacon (R.E.); Lieut.-Col. G. C. St. P. de Dombasle (Can. Forces); Lieut.-Col. H. Delacombe; Capt. (A./Maj.) R. B. C. M. T. de Poix (Notf. R.) (France); Maj. (A./Lieut.-Col.) J. Dickson (S.A. Engrs.); Maj. (A./Lieut.-Col.) J. E. Dixon (Spain) (Hants R.) (Egypt); Maj. G. Dixon (Spain, M.C. (R. Fus.); Capt. (A./Maj.) G. W. Dobson (9th Hussars); Capt. (A./Maj.) M. R. Dobson, M.B. (R.A.M.C.); Maj. J. F. Dyer (E. Lancs.); Capt. (A./Maj.) A. S. Ellerton (France); Maj. A. T. Evans; Capt. (A./Maj.) W. S. Evans (Welsh R.) (France); Capt. (A./Maj.) R. M. Everett; Maj. (A./Lieut.-Col.) G. F. Hay Faithful (I. Army) (France); Maj. (A./Lieut.-Col.) R. L. Farley (Cavly. Res.); Lieut.-Col. W. S. Fetherstonhaugh (Can. F. Corps) (France); Maj. S. J. V. Fil; Maj. H. F. Fisher (Canada); Capt. (A./Maj.) H. G. Ford (France); Capt. (A./Lieut.-Col.) P. Gadsby (A.O.D.); Maj. A. E. Gendle; Capt. (A./Maj.) D. Good; Capt. (A./Maj.) G. L. Godden (France); Maj. R. E. Goddard; Maj. H. F. A. Gordon (Y. and L.R.); Maj. J. W. Gordon; Lieut.-Col. E. H. Griffith (Leic. R.); Capt. (A./Maj.) G. Guide (Paris); Maj. (A./Lieut.-Col.) R. Hall, M.B.E. (Egypt); Capt. (A./Maj.) W. W. Hall (France); Col. Rev. R. E. V. Hanson, D., Chaplain-in-Chief; Maj. W. B. Hargrave (Suff. R.) (T.F.); Capt. (A./Maj.) E. St. C. Harnett (R. Highrs.) (France); Maj. C. A. L. Harrison (Paris); Maj. A. P. Hartley (Ches. R.) (T.F.); Capt. (A./Maj.) F. H. Hawksford (Canada); Maj. E. M. W. Hearn; Lieut.-Col. S. A. Hebdon (France); Capt. (A./Maj.) F. E. Hellyer (Hants. R.) (T.F.); Capt. C. H. A. Hirtzel (Salonika); Maj. A. H. Hogarth, D.C.M. (R.A.M.C.) (Mediterranean); Maj. G. E. W. Humphrey; Capt. (A./Maj.) A. Hunter (W. Rid. R.); Capt. (A./Lieut.-Col.) D. Iron; Capt. (A./Maj.) D. C. James (Worce. R.); Lieut.-Col. F. H. Jenkins, M.C.; Capt. (A./Maj.) J. F. Jones, D.S.C. (I. Force, France); Maj. W. D. L. Jupp (France); Capt. (A./Maj.) M. Keegan, M.M. (R. Dub. F.) (Egypt); Lieut.-Col. (A./Col.) F. H. Kirby, V.C., D.C.M. (R.E.); Capt. (A./Maj.) W. C. Lambert (Notts. Yeo.) (T.F.); Lieut.-Col. J. H. A. Langdon, D.S.O. (I. Force, France); Capt. (A./Maj.) P. A. Landry (Can. Inf.); Maj. (A./Lieut.-Col.) C. E. Lawder (R.F.A.) (France); Maj. A. R. Layard (Adriatic); Capt. (A./Maj.) F. W. H. Lerwill (R.E.); Maj. (A./Lieut.-Col.) A. Levick (G. Gds.); Capt. (A./Lieut.-Col.) O. Lindquist; Capt. (A./Lieut.-Col.) P. D. L. Lyall (Can. For. Corps) (France); Maj. O. G. W. C. Lywood (Norfolk R.); Maj. (A./Lieut.-Col.) A. E. G. MacCallum (Intell. Corps); Capt. (A./Maj.) K. H. McLean (R.N.V.R.); Capt. (A./Maj.) T. MacLeod; Maj. (A./Lieut.-Col.) G. M. G. Visc. Maidstone, D.S.C. (Flanders); Capt. (A./Maj.) R. B. Mansell (4th Glouc.) (T.F.); Capt. (A./Maj.) H. P. Maybury (France); Maj. H. A. Michell, Capt. (A./Maj.) A. M. Miller, D.S.O.; Hon. Capt. (A./Maj.) H. Milman (R.E.); Capt. (A./Maj.) R. G. Mitchell (R. Scots); Maj. (A./Lieut.-Col.) R. Money (R. Lanc. R.); Capt. (A./Maj.) E. F. Monk; Capt. (A./Maj.) A. T. Moore; Maj. D. A. B. Noble; Lieut.-Col. (Hon. Col.) L. Munro (Hamps. R.); Maj. A. L. C. Neame (R.E.) (France); Capt. (A./Maj.) C. G. Nevatt (France); Maj. H. R. Nicholl (I. Force, France); Capt. (A./Maj.) J. MacA. Nicolle (3rd S. Staffs); Capt. (A./Maj.) S. Nixon; Lieut.-Col. D. A. Oliver, D.S.O. (Adriatic); Capt. (A./Maj.) L. E. Palmer (York and Lanc. R.); Maj. C. H. Parkes; Maj. S. A. Parr (Canada); Maj. R. H. Peck (11th E. Surr. R.); Lieut.-Col. W. H. Pope; Maj. (A./Lieut.-Col.) E. W. Powell (Egypt);

Asst. Comdt. Mrs. L. M. K. Pratt-Barlow, M.B.E.; Capt. (A./Maj.) J. E. M. Pritchard; Maj. (A./Lieut.-Col.) W. J. D. Pryce, D.C.M. (Gord. Highrs.); Capt. (A./Maj.) C. F. Rasmussen; Maj. G. J. Read (4th N. Staffs); Lieut.-Col. L. W. R. Rees, V.C., M.C., A.F.C. (R.G.A.); Capt. (A./Maj.) T. S. Rippon (R.A.M.C.); Lieut.-Col. C. MacL. Robertson (R.F.A.); Maj. (A./Lieut.-Col.) H. M. M. Robertson, M.C. (R.F.A.); Lieut.-Col. R. S. Robinson; Lieut.-Col. N. Roche; Maj. J. T. Rodwell (France); Capt. (A./Maj.) S. G. Rome, M.C. (A. and S. Highrs.); Capt. (Hon. Maj.) A. A. Ross; Lieut.-Col. A. Ross-Hume (Sco. Rif.); Maj. (Hon. Lieut.) the Hon. V. A. F. V. Russell (Beds. R.) (T.F.) (I. Force, France); Maj. F. R. Samson; Capt. (A./Maj.) E. Selby; Maj. J. P. C. Sewell (France); Capt. (A./Maj.) H. T. Shaw; Maj. A. F. Sidgreaves; Maj. G. E. Smith (E. Yorks); Capt. (A./Maj.) J. D. Smith; Maj. S. W. Smith (R.A.); Capt. (A./Maj.) W. E. Smith (France); Capt. (A./Maj.) G. Somers-Clarke (Mesopotamia); Capt. (A./Maj.) D. C. L. Speed (K.R.R.C.); Capt. (A./Maj.) F. Steel (Essex R.); Maj. J. V. Steel (R.E.); Capt. (A./Maj.) F. D. Stevens (M.G. Corps); Capt. (A./Maj.) G. Stevens (France); Capt. (A./Maj.) J. Stewart (R. Scots. F.); Capt. (A./Maj.) A. H. Stradling (Gord. Highrs.) (France); Lieut.-Col. L. H. Strain, D.S.C.; Capt. (A./Lieut.-Col.) H. W. Stratton (6th D.G.); Capt. (A./Maj.) L. M. P. Sullivan (R.E.); Maj. (A./Lieut.-Col.) G. H. Thomson (Aegean); Lieut.-Col. G. E. Todd (Welsh R.) (Salonika); Maj. H. C. Tweedie, D.S.O. (N. Staffs); Maj. (A./Lieut.-Col.) H. H. Unwin; Lieut.-Col. R. H. Verney; Capt. (A./Maj.) W. J. Waddington (G. Gds.); Capt. (A./Maj.) W. Wade (Midd'x R.); Capt. (A./Lieut.-Col.) H. N. Walker, M.C. (Welsh R.); Lieut.-Col. A. T. Watson (Nigeria R.); Maj. G. W. Williamson, M.C. (Manch. R.); Capt. (A./Maj.) H. A. I. Wilson; Maj. (A./Lieut.-Col.) A. B. Winch (R. Scots Greys); Capt. (A./Maj.) C. W. Wise, M.C. (A.S.C.) (Salonika); Maj. T. Worrick (France); Capt. (A./Maj.) H. E. F. Wyncoll, M.C. (Notts and Derby R.); Maj. (A./Lieut.-Col.) H. I. F. Yates, M.C.; Capt. (A./Maj.) C. F. Yeomans; Capt. (A./Maj.) A. Young.

M.B.E. (Military Division)

Capt. W. J. Adkins (Glouc. R.); Lieut. (A./Capt.) S. L. Amor (France); Lieut. J. C. Andrews; Lieut. (Hon. Capt.) B. O. Angell (France); Lieut. W. M. Annet (Egypt); Lieut. H. J. Axten (R. Fus.); Capt. A. H. S. Baker (Egypt); Capt. P. C. Barber (Chaplain); Capt. H. O. Barnaby (R.F.A., T.F.); Lieut. (A./Capt.) P. H. Barr; Admstr. Miss C. T. Bayley; Capt. B. J. Beeton; Capt. R. Belli-Bivar (R.I. Fus.) (I. Force, France); Capt. C. B. Bell, M.C. (S. Staffs. R.); Capt. H. L. Betteridge; Lieut. (A./Capt.) J. P. P. L. Biggs (France); Capt. E. L. M. Bird; Lieut. H. Booker; Sec. Lieut. (A./Capt.) J. A. Bonnyman (Welsh R., T.F.) (Egypt); Lieut. (A./Capt.) W. Bowring (France); Lieut. H. E. Brackenboro; Lieut. (A./Maj.) C. J. Brockbank; Capt. J. Brown, M.C. (Egypt); Capt. W. E. G. Bryant (R. Fus.); Lieut. (A./Maj.) T. L. F. Burnett; Sec. Lieut. (Hon. Lieut.) P. J. Burns (R.G.A.); Capt. W. L. Burt (Essex R.) (France); Lieut. (A./Capt.) L. C. Bygrave (I. Force, France); Lieut. D. Cairns (High. Cyc. C.) (France); Lieut. A. E. Cambridge; Lieut. (A./Capt.) M. Campbell (R. W. Kent R.); Capt. E. P. Carmody (R.A.M.C.); D./Admstr. Mrs. M. Canley; Capt. A. W. Carter, D.S.C. (France); Lieut. (A./Capt.) H. Cassels (Canada); Sec. Lieut. (A./Lieut.) W. R. Castings; Capt. J. Chambré, M.D. (Egypt); Capt. C. K. Chandler; Sec. Lieut. (A./Lieut.) B. Cheeseman (France); Capt. S. Clare (France); Lieut. (H. and A./Capt.) P. Colbeck (Northid. Fus.) (Egypt); Lieut. (A./Capt.) R. A. W. Collet; Capt. W. J. Cooper (Aus. F.C.) (France); Capt. B. F. Crane (I. Force, France); Lieut. (H./Capt.) A. T. Cranmer (Midd'x R., T.F.); Lieut. (A./Capt.) W. E. Cranmer (Midd'x R.); Capt. H. L. Crichton (A.O.D.); Lieut. (A./Capt.) R. L. Crofton; Capt. W. G. M. Crothers (Suff. R.) (Egypt); Lieut. (A./Capt.) S. Cunnington (W. Rid. R.); Sec. Lieut. (Hon. Lieut.) J. D. C. Curtis, M.C. (R. Lancs. R.); Lieut. (A./Capt.) F. Dance (France); Lieut. J. H. Dand; Sec. Lieut. (A./Capt.) H. Dawes; Lieut. (A./Capt.) W. Dawson; D./Admstr. Miss F. Day; Lieut. G. E. M. Dean (Can. Fd. Arty); Capt. R. Donald (France); Sec. Lieut. (A./Lieut.) F. G. Eckford; Lieut. R. W. Everett; Sec. Lieut. (A./Capt.) H. K. Fairbrother; Capt. T. Fawdry (N. Lancs. R.) (Egypt); Sec. Lieut. C. A. Firmin, 50th Sqdn. (France); Sec. Lieut. (A./Lieut.) M. B. Fitzgerald (France); Lieut. (A./Capt.) J. R. Frankish (France); Sec. Lieut. L. Freeborn (Aegean); Capt. S. T. Freeman (Aegean); Capt. O. H. Frost, M.C. (Midd'x R.) (France); Capt. A. A. Fry (France); Capt. N. B. Fuller (Mesopotamia); Sec. Lieut. A. R. Fulton; Lieut. (A./Capt.) R. G. Fyfe (Salonika); Lieut. (A./Capt.) E. W. Geer; Capt. T. M. Gerrard; Lieut. (A./Capt.) H. H. Giles; Capt. S. C. Godfrey, M.C. (R. Scots. Fus.); Lieut. (A./Capt.) G. F. Goiding (France); Sec. Lieut. (A./Capt.) R. C. Graham (N. Staffs.); Lieut. (Hon. and A./Capt.) F. Grave (Lond. R.); Capt. A. G. Griggs; Capt. A. W. W. Groome (Norfolk Yeo.); Capt. P. E. Gwyer (R.M.A.); Capt. T. G. Gordon (I. Force) (France); D./Admstr. Mrs. M. Halcrow; Capt. W. E. Hayward; Capt. L. Henshall (S. Lancs. R.); Lieut. G. A. Hill, M.C. (Manch. R.) (Russia); Lieut. (A./Maj.) C. E. Hodgson (R. War. R.); Capt. H. Hulbert; Capt. F. Jefeote (Suff. R.) (Egypt); Sec. Lieut. (A./Maj.) H. Jones; Capt. H. R. Kavanagh (R. I. Fus.) (France); Lieut. W. G. Kewley (France); Lieut. (A./Capt.) A. G. Knight; Sec. Lieut. (A./Lieut.) J. M. Knight (France); Capt. the Hon. E. G. W. T. Knollys (Lond. R.) (France); Capt. E. G. Knox (Aus. F.C.) (France); Lieut. (A./Capt.) J. W. Langmuir (Canada); Lieut. (A./Capt.) E. J. Langridge (N. Staffs. R.) (France); Capt. E. P. Leigh-Bennett; Capt. A. F. Livingstone (K.R.R.C.); Lieut. (T./Capt.) R. E. L. Lott (West. Ontario R.); Lieut. P. A. McBain (Aus. F.C.) (Palestine); Sec. Lieut. R. D. G. Macrostie (Egypt); Lieut. R. Macdonald (Liverpool R.); Sec. Lieut. (A./Lieut.) W. J. Maley; Capt. H. C. Mallett; Capt. D. T. W. Manwell (Aust. F. Corps); Sec. Lieut. A. P. Marchant, D.S.M. (I. Force) (France); Lieut. L. J. Mars (York Hrs., Yeo.); Capt. T. B. Marson (Lond. Yeo.) (I. Force) (France); Lieut. J. B. Mawdsley (Can. F.C.) (France); Lieut. (A./Capt.) K. A. Meek (W. Yorks R.); Sec. Lieut. (Hon. and A./Lieut.) D. R. Mitchell (France); Lieut. H. S. Morris (Cold. Gds., S.R.) (France); Lieut. (A./Capt.) P. H. Morrissey; Admstr. Miss D. C. Muir; Lieut. (A./Capt.) F. Murphy; Lieut. (A./Capt.) T. H. Nesbitt (France); D./Admstr. Mrs. F. M. S. Newton; Capt. W. S. Newton-Clare (France); Capt. B. J. Nicholson; A./Comdt. Miss C. Noel; Lieut. H. P. Northcote (W. Yorks.); Capt. W. E. Nuttall; Capt. G. Palmer (Devon R.); Lieut. (A./Capt.) G. W. Panter (R. I. Rif.) (Adriatic); Admstr. Miss K. Pearce; Lieut. (A./Capt.) P. P. C. Penberthy (Shrops. L.I.); D./Admstr. Mrs. G. Pertwee; Lieut. (A./Capt.) F. Petch (France); Sec. Lieut. C. W. Phipps (France); Capt. D. W. Pinckney; Sec. Lieut. (A./Capt.) J. M. Pinkerton; Lieut. (A./Capt.) E. E. Porter, D.C.M. (Som. L.I.) (France); Lieut. F. H. Postlethwaite; Lieut. F. J. B. Powell; Sec. Lieut. W. P. B. Pugh; Sec. Lieut. J. C. Raine (France); Admstr. Mrs. A. Rathbun; Sec. Lieut. (A./Capt.) D. M. Rees (Adriatic); Capt. W. Ricketts (Dgn. Gds.); Capt. A. Ridley (Dgn. Gds.); Capt. E. Rivers-Smith (Midd'x. Yeo.); Capt. J. Robinson; Lieut. (Hon. and A./Capt.) G. W. Rogers (N. Staffs.); Lieut. G. O. Roper; Lieut. (A./Capt.) A. J. M. Ross (France); Lieut. (Hon. Capt.) A. A. Rowe (R.E.); Lieut. (Hon. Maj.) C. W. Rowe (Hunts Cyc. Bn.) (Egypt); Capt. J. H. Scandrett, M.C. (Canada); Capt. A. E. Siddons-Wilson; Lieut. (A./Capt.) R. J. Sladden, D.C.M.; Capt. A. G. H. Smart, M.B. (R.A.M.C.) (France); Capt. H. Stanfield (France); Capt. D. S. Stevenson, M.B. (Flanders); Sec. Lieut. J. G. McK. M. Stronach

Lieut. (A. Capt.) F. Susans; Sec. Lieut. (A./Capt.) J. Sutherland (Adriatic); Lieut. (A./Capt.) W. Sutherland (Midx. R.) (Egypt); Capt. J. B. R. Swan; Sec. Lieut. (A./Lieut.) R. Swan (France); Lieut. (A./Capt.) F. A. Swoffer (Midx. R.) (France); Sec. Lieut. A. H. Taylor (France); Capt. B. A. Taylor; Capt. L. E. Taylor (R.E.); Hon. Lieut. (A./Capt.) H. H. Thomas (R.F.A., S.R.) (Palestine); Adminstr. Miss E. Thomson; Capt. A. P. Thurston; Lieut. (A./Capt.) E. Trist; Lieut. (A./Capt.) S. H. Twining (Midx. R.); Lieut. (A./Maj.) H. Waddington (Manch. R.); Capt. H. C. Waghorn (Lond. R.); Sec. Lieut. (A./Maj.) F. Waldron (Worcs. R., T.F.); Lieut. (A./Capt.) H. F. Walker; Lieut. (A./Capt.) P. Warburton (R.G.A.); Capt. W. G. J. Wardle; Lieut. (A./Capt.) A. M. Watson (Shrops. L.I.) (France); Lieut. (A./Maj.) W. Watson (Highland Cyc. C.); Capt. W. Mcl. Watt (R. Hdrs.); Lieut. (A./Capt.) F. M. I. Watts (Worcs. R.) (Mesopotamia); Capt. D. C. Waylen; Lieut. J. G. Western (France); Capt. F. T. Williams (W. Yorks R.); Lieut. (A./Capt.) G. A. Williams (France); Capt. O. Williams; Lieut. (A./Capt.) A. McC. Wilson (H.L.I.) (France); Capt. A. M. Wilson (4th Gord. Highrs.) (I. Force); Lieut. (A./Capt.) F. A. Woolfe; Lieut. W. J. T. Wright (Can. Forces) (I. Force) (France); Sec. Lieut. H. J. Young (France).

Hon. M.B.E.

Mulazim Tani, Mahmud Effendi Mustafa Maher, 4th Bn., Egyptian Army, attd. R.A.F., Helmsia, Egypt.

Other Rewards

The King has been pleased to approve of the following rewards to officers and other ranks of the Royal Air Force in recognition of distinguished services rendered during the war:—

Bar to the Distinguished Service Order

Lieut.-Col. F. W. Bowhill, D.S.O. (Mediterranean). (D.S.O. gazetted Feb. 22, 1918.)

Distinguished Service Order

Capt. (A./Maj.) W. L. Birch, M.B.E. (W. Yorks R.) (Egypt); Lieut.-Col. E. L. Gossage, M.C. (R. Art.) (France); Capt. R. King, D.F.C. (Aus. F.C.) (France); Lieut.-Col. C. R. Maclean, M.C. (R. Scots Fus.) (France); Maj. (A./Lieut.-Col.) L. A. Pattinson, M.C., D.F.C. (R. Fus.) (I. Force, France); Lieut.-Col. C. E. Risk (R.M.L.I.) (Mediterranean); Maj. J. C. Russell (R.E., T.F.) (France).

Second Bar to the Distinguished Flying Cross

Lieut. (A./Capt.) W. H. Longton, D.F.C., A.F.C. (France). (1st Bar gazetted Feb. 8, 1919. D.F.C. gazetted Nov. 2, 1918. A.F.C. gazetted June 3, 1918.)

Bar to the Distinguished Flying Cross

Lieut. E. O. Aamm, D.F.C. (France) (D.F.C. gazetted Dec. 3, 1918); Capt. R. N. G. Atkinson, M.C., D.F.C. (France) (M.C. gazetted Oct. 18, 1917); D.F.C. gazetted Nov. 2, 1918; Sec. Lieut. E. G. Davies, D.F.C. (France) (D.F.C. gazetted Feb. 8, 1919); Lieut. (A./Capt.) D. Grinnell-Milne, D.F.C. (R. Fus.) (France) (D.F.C. gazetted Feb. 8, 1919); Lieut. (A./Capt.) M. C. McGregor, D.F.C. (France) (D.F.C. gazetted Nov. 2, 1918); Capt. J. W. Pinder, D.F.C. (France) (D.F.C. gazetted June 3, 1918); Capt. W. D. Thom, D.F.C. (I. Force, France) (D.F.C. gazetted Aug. 3, 1918).

Distinguished Flying Cross

Lieut. A. H. A. Alban (R.F.A.) (France); Lieut. (A./Capt.) F. H. Baguley (France); Maj. C. Baker (Aus. F.C.) (France); Lieut. (A./Capt.) J. M. Batting (India); Lieut. (A./Capt.) E. B. S. Beaton (Aust. F.C.) (Palestine); Lieut. (A./Capt.) V. Beecroft (France); Lieut. A. L. B. Bennett (Hants. R.) (Palestine); Capt. N. A. Bolton (R.F.A.) (Palestine); Sec. Lieut. P. Boulton (France); (Capt. (A./Maj.) G. H. Bowman, D.S.O., M.C. (R. War. R.) (France); Lieut. C. A. Bridgland (E. Surr. R., I. Force) (France); Sec. Lieut. H. P. Burmell (Flanders); Sec. Lieut. D. S. Carrie (France); Sec. Lieut. (Hon. Capt.) W. A. Carrothers (Can. Inf.) (France); Lieut. (A./Capt.) H. C. Chambers (I. Force, France); Lieut. A. E. Chittenden (France); Sec. Lieut. (Hon. and A./Lieut.) W. Coker (E. Surr. R.) (France); Lieut. H. N. Compton (France); Capt. (A./Maj.) A. Coningham, D.S.O., M.C. (France); Sec. Lieut. I. B. Corey (France); Sec. Lieut. R. C. Creamer (France); Lieut. (A./Capt.) C. W. Cudemore, M.C. (France); Lieut. D. B. Cumming (I.A.R.O.) (India); Lieut. (A./Capt.) J. Cunliffe, (I. Force, France); Lieut. (A./Capt.) E. E. Davies (Aust. F.C.) (France); Lieut. (A./Capt.) W. H. Demel (Manc. R.) (France); Sec. Lieut. J. C. Deremo (France); Lieut. J. H. Dewhurst (France); Sec. Lieut. C. H. Dickens (Can. Inf.) (France); Capt. T. M. Dickinson (Mesopotamia); Lieut. N. S. Douglal (Lincs. R.) (Flanders); Sec. Lieut. G. E. Dowler (France); Lieut. S. L. Dowsell (Can. Inf.) (I. Force) (France); Lieut. (A./Capt.) J. E. Doyle (France); Lieut. (A./Capt.) A. T. Drinkwater (France); Lieut. (A./Capt.) L. de S. Duke (Can. Inf.) (France); Lieut. D. C. Dunlop (France); Sec. Lieut. A. C. Dutton (R.W. Kent R.) (France); Lieut. (Hon. Capt.) C. S. Emden (R.W. Kent R.) (France); Lieut. P. A. A. Enright (Ægean); Lieut. (A./Capt.) R. T. Fagan (France); Capt. C. Fawssett (R. Suss. R.) (France); Lieut. (A./Capt.) H. Ford (North'd. Fus.) (France); Lieut. S. G. Ford (France); Lieut. (A./Capt.) J. W. Foreman (France); Lieut. W. T. Fraser (R.F.A.) (Palestine); Capt. W. C. Gage (France); Capt. E. J. Garland (I. Force, France); Maj. (A./Lieut.-Col.) A. G. R. Garrod, M.C. (Leics. R.) (France); Sec. Lieut. A. J. Garside (France); Lieut. (A./Capt.) F. G. Gibbons (France); Lieut. (A./Capt.) H. M. Golding (France); Sec. Lieut. F. S. Gordon (France); Lieut. R. J. P. Grebby (Palestine); Lieut. (A./Capt.) J. C. Green (France); Lieut. (A./Capt.) R. Grice (France); Lieut. F. A. D. Hamilton (Aus. F.C.) (France); Sec. Lieut. E. C. Harris (K.R.R.C.) (France); Capt. G. J. Harter (Palestine); Lieut. F. C. Hawley (Aus. F.C.) (Palestine); Lieut. G. R. Hicks (France); Lieut. J. C. Holmes (I. Force, France); Lieut. J. A. Hoogterp (France); Lieut. (A./Capt.) G. H. Hooper, M.C. (R.E., T.F.) (France); Lieut. (A./Capt.) G. V. Howard (France); Capt. O. Hughes (India); Lieut. W. Jack (France); Lieut. N. H. Jekins, D.S.M. (Flanders); Lieut. F. R. Johnson (France); Sec. Lieut. P. A. H. King (France); Lieut. O. Lamplough (Aus. F.C.) (France); Lieut. J. H. Latchford (France); Capt. W. B. Lawson, (I. Force, France); Capt. (A./Maj.) C. M. Leman, M.C. (France); Lieut. (A./Capt.) W. K. R. Liddell (H.L.I.) (France); Lieut. W. S. Lighthall (Dorset R.) (Palestine); Lieut. H. N. Loch (I.A.) (France); Lieut. (A./Capt.) A. R. McAfee (France); Lieut. (A./Capt.) G. N. McBlain (France); Lieut. (A./Capt.) F. S. McClurg (France); Lieut. (Hon. Capt.) A. D. MacDonald, 42nd Squadron (Can. Eng.) (France); Lieut. E. N. MacDonald (I. Force, France); Lieut. N. S. MacGregor (France); Lieut. (A./Capt.) W. J. MacKenzie (Flanders); Capt. G. Mackrell (India); Sec. Lieut. H. McLean (France); Lieut. M. P. MacLeod (France); Lieut. C. E. Maitland (R.G.A.) (France); Sec. Lieut. (Hon. Lieut.) C. M. Moore (France); Sec. Lieut. J. R. Moorhouse (France); Lieut. A. W. Murphy (Aust. F.C.) (Palestine); Sec. Lieut. (Hon. Lieut.) C. W. Murray (Glasgow Yeo.) (France); Lieut. F. Noble (France); Lieut. (A./Capt.) H. A. Oaks (France); Lieut. (A./Capt.) G. C. O'Donnell (Palestine); Lieut. (H./Capt.) J. E. A. O'Dwyer (Notts. and Derby. R.) (Salonika); Lieut. K. J. Oldfield (Egypt); Capt. (A./Maj.) K. R. Park, M.C. (R.F.A.) (France); Lieut. L. F. Pendred (Flanders); Sec. Lieut. A. R. Pengilly (France); Lieut. A. Pickin (France); Lieut. G. A. Pitt (France); Sec. Lieut. (Hon. Capt.) H. A. Porter (R.G.A.) (France); Lieut. (A./Capt.) H. V. Puckridge (Shrops. L.I.) (France); Sec. Lieut. H. R. A. V. Punter (I. Force) (France); Lieut. T. G. Rae (France); Capt. (A./Maj.) W. R. Read, M.C., A.F.C. (Dgn. Gds.) (I. Force, France); Lieut. (A./Capt.) T. Roberts (France); Lieut. F. E. Robinson (France); Sec. Lieut. A. Rogerson (France); Lieut. H. Ross (Aus. F.C.) (France); Lieut.-Col. F. M. Roxby, O.B.E. (N. Staffs. R.) (France);

Lieut. F. S. Russell, D.S.C. (Flanders); Sec. Lieut. (A./Capt.) R. Russell (France); Lieut. H. P. Schoeman (France); Sec. Lieut. F. W. Seed (France); Lieut. R. A. Skelton (France); Lieut. (Hon. Capt.) C. C. Snow (France); Sec. Lieut. R. Stafford-Langan (Leinster R.) (France); Lieut. (A./Capt.) E. J. Stephens (France); Lieut. F. J. Stevenson (France); Sec. Lieut. (Hon. and A./Capt.) H. W. Stockdale (France); Lieut. J. A. Stronach (I. Force, France); Lieut. C. S. Style (Italy); Sec. Lieut. (A./Capt.) J. F. D. Tanqueray (Can. Fes.) (France); Lieut. R. A. Thomas (R. Welsh Fus.) (France); Sec. Lieut. F. Thomasson (France); Lieut. F. O. Thornton (France); Lieut. U. G. A. Tonge (Flanders); Lieut. (A./Capt.) S. E. Toomer (R.G.A.) (France); Lieut. (A./Capt.) G. R. Travis (India); Lieut. N. C. Trescowthick (Aus. F.C.) (France); Sec. Lieut. (A./Lieut.) J. Turner (France); Lieut. E. W. Unmack (Ægean); Lieut. (A./Capt.) C. L. Veitch (N. Lancs. R., T.F.) (France); Lieut. (A./Capt.) I. Welby, M.C. (France); Lieut. J. J. Wellwood (Aus. F.C.) (France); Lieut. (A./Capt.) H. A. White (France); Capt. T. W. White (Aus. F.C.) (Mesopotamia); Lieut. P. Wilkins, M.C. (R.E.) (France); Lieut. B. C. W. Windle (roznd Sqdn.) (France); Lieut. E. H. Williams (France); Sec. Lieut. H. C. Wood (France); Lieut. F. Woolley (France); Capt. J. W. Wright (Aus. F.C.) (France); Capt. H. N. Wrigley (Aus. F.C.) (France).

Air Force Cross

Lieut. E. M. Ackery; Lieut. C. L. Adamson; Capt. G. Alchin (R.F.A., S.R.); Lieut. (A./Capt.) W. Algie, D.S.O. (North'd Fus.); Lieut.-Col. D. L. Allen (R.I. Fus.); Capt. (A./Maj.) F. G. Andreae; Lieut. H. W. Arnold (R.E.); Lieut. L. B. Aylen; Capt. L. M. Bailey (Egypt); Capt. G. Barrett (R.E.); Capt. T. A. Batchelor, D.F.C.; Capt. (A./Maj.) F. A. Bates, M.C. (Denbigh Yeo.) (Salonika); Col. (A./Brig.-Genl.) J. H. W. Becke, C.M.G., D.S.O. (Notts. and Derby. R.); Lieut. (A./Capt.) R. J. B. Benson (Welsh R.); Capt. (A./Maj.) H. J. T. Berryman (Adriatic); Col. A. W. Bigsworth, C.M.G., D.S.O.; Lieut.-Col. H. Blackburn, M.C. (France); Lieut. C. W. Blain; Capt. (A./Maj.) R. S. Booth; Lieut. (A./Capt.) W. T. Breach (A.S.C.); Lieut. H. G. S. Broad; Capt. H. S. Broad; Lieut. (A./Capt.) D. C. M. Brooks, M.C.; Capt. L. O. Brown, D.S.C. (S. Afr. Art.); Maj. R. S. Brown (Aus. F.C.); Lieut. G. M. Bryer; Lieut. (A./Capt.) V. W. Burgess (Aus. Eng.); Maj. A. J. Butler, M.C. (R.I. Rif.); Lieut. (A./Capt.) W. B. Callaway; Lieut. (A./Capt.) G. G. Callender (Aus. D.F.); Capt. C. W. Carleton (S.A.D.F.); Lieut.-Col. G. I. Carmichael, D.S.O. (R.F.A.); Lieut. (A./Capt.) E. T. Carpenter (War. Yeo.); Capt. (A./Maj.) A. W. Cassy; Capt. T. C. Chamberlain (Midx. R.); Lieut.-Col. E. T. R. Chambers; Lieut. L. P. Chase (Aus. F.C.); Lieut. (A./Capt.) F. W. Clark (France); Maj. E. E. Clarke (Y. and Lan. R.); Capt. G. M. Clarke (Leins. R.); Lieut. (A./Capt.) L. Clarke (Manc. R.) (Egypt); Capt. G. E. Clinton (Lond. Scots); Capt. (A./Maj.) D. Cloete, M.C.; Capt. R. B. Corfield; Maj. G. H. Cox (N. Staffs. R.); Lieut. (A./Capt.) W. R. Cox, M.C. (D.C.L.I.); Capt. (A./Maj.) H. E. Craufurd (A./Maj.) G. M. Croil (Gord. Highrs.) (T.F.) (Egypt); Lieut. (A./Capt.) H. Daniel, M.C.; Capt. R. Davies; Maj. H. G. Dean (Y. and Lan. R.); Capt. D. M. Deighton; Capt. J. R. S. Devlin, D.S.C. (Canada); Maj. B. P. H. de Roeper (Egypt); Capt. N. H. Dimmock; Lieut. (A./Capt.) N. P. Dixon; Lieut. R. M. Dixon (9th Berks); Lieut. H. H. Down (Artists Rif.); Lieut. S. E. Dreschfeld; Lieut. D. H. Drew; Lieut. J. Drew; Capt. H. F. S. DREWITT, M.C. (N.Z.F.); Capt. (A./Maj.) A. Duguid (R.F.A.); Capt. (A./Maj.) A. Durston; Maj. T. H. England, D.S.C.; Maj. (A./Lieut.-Col.) D. C. S. Evill, D.S.C.; Lieut. R. T. Eyre; Capt. A. B. Fanstone; Lieut. (A./Capt.) G. W. Ferguson, M.C. (R.A.S.C.); Maj. F. B. Fowler; Lieut. G. J. Fowler; Sec. Lieut. (Hon. Lieut.) H. A. Francis; Capt. A. Frauenfelder; Capt. M. B. Frew, D.S.O., M.C. (H.L.I.); Capt. (A./Maj.) P. F. Fullard, D.S.O., M.C. (R.I. Fus.); Capt. A. N. Gallehawk; Lieut. (A./Maj.) F. G. Garratt (Canada); Capt. C. L. E. Geach (Dgn. Gds.); Lieut. T. Gilbert (I.A.R.O.) (India); Lieut. (A./Capt.) J. L. S. Gill (I. Force, France); Lieut.-Col. S. Grant-Dalton, D.S.O. (Yorks R.) (Egypt); Lieut.-Col. (A./Col.) J. C. Halahan, C.B.E. (R. Dub. Fus.); Sec. Lieut. E. Hall (Y. and L. R.); Lieut. H. Hamer; Capt. W. A. Hannay (L'pool. R.) (Washingtion); Lieut. D. A. Harding (Egypt); Maj. (A./Lieut.-Col.) S. H. B. Harris (K. E. Hse.); Capt. B. E. Harrison; Sec. Lieut. (A./Lieut.) R. L. Hartley; Lieut. (H./Capt.) F. W. Hartridge (R.A.S.C.); Lieut. G. Harwood (Essex R.); Lieut. H. R. Hastings; Capt. W. L. Hay; Lieut. (A./Capt.) A. E. Hedger (Y. and L. R.); Maj. (A./Lieut.-Col.) G. L. P. Henderson, M.C. (R.E.); Lieut. (A./Capt.) J. B. Henry (R. Innis. Fus.); Capt. W. V. Herbert (Aus. F.C.); Lieut.-Col. W. C. Hicks; Maj.-Genl. J. F. A. Higgins, C.B., D.S.O. (France); Lieut. (A./Capt.) D. A. F. Hilton, M.C. (Canada); Lieut. A. H. Hinton (C.F.A.); Lieut. G. S. Hodson (Flanders); Capt. L. H. Holden, M.C. (Aus. F.C.); Capt. (A./Maj.) F. P. Holliaday, D.S.O., M.C. (Can. Eng.); Capt. H. T. Horsfield (Worcs. R.); Lieut. (A./Capt.) R. T. B. Houghton (Northants R.); Capt. G. F. Hughes, M.C. (Aus. Inf.); Capt. (A./Maj.) R. E. A. W. Hughes-Chamberlain; Lieut. C. A. Hyde (R. Fus.); Capt. H. C. Irwin; Lieut. J. H. Jennings (R.A.S.C., M.T.); Capt. (A. Maj.) M. R. N. Jennings, M.C.; Capt. C. N. Jones (Notts and Derby R.); Capt. I. G. Kelly; Capt. N. Kemsley; Capt. J. Kerr (Gord. Highrs.); Lieut. (A./Capt.) S. G. Knock (Seaforth Highrs.); Lieut. (A./Capt.) C. McM. Laing, M.C. (R. Scots Fus.) (Mediterranean); Capt. F. C. Lander; Maj. R. T. Leather (War. Yeo.); Lieut.-Col. (A./Brig.-Genl.) C. F. Lee, C.M.G. (K.R.R.C.) (Washington); Lieut. (A./Capt.) A. M. Lewis (R.G.A., S.R.); Capt. (A./Maj.) G. L. Lloyd, M.C. (Staffs. Yeo.); Lieut. N. B. Lovmore; Capt. (A./Maj.) R. S. Lucy (Worc. R.); Lieut. G. J. Lusted; Lieut. (A./Capt.) H. T. Lydford; Capt. (A./Maj.) W. R. B. McBain, M.C. (R.F.A., T.F.) (Salonika); Capt. A. J. H. MacColl; Capt. (A./Maj.) W. H. Mackenzie; Capt. N. MacMillan, M.C. (H.L.I.); Lieut. R. I. Macpherson (Dorset R.); Lieut. S. E. Mailer (Aus. Inf.); Capt. G. F. Malley, M.C. (Aus. F.C.); Maj. (A./Lieut.-Col.) P. C. Maltby, D.S.O. (R. Welsh Fus.); Capt. A. Mann, M.C. (R.A.S.C., T.F.); Lieut. G. H. Martingell; Capt. G. C. Matthews (Aus. F.C.); Capt. (A./Maj.) G. J. C. Maxwell, M.C., D.F.C. (Lovat's Scouts); Capt. (A./Maj.) F. H. M. Maynard; Capt. H. Meintjes, M.C. (S.A. Forces); Capt. F. J. W. Mellerish; Lieut. C. W. Meredith (S.A. Eng.); Capt. A. L. Messenger; Lieut. (A./Capt.) N. C. Millman, M.C. (Can. Eng.); Lieut.-Col. R. P. Mills, M.C. (R. Fus.); Maj. G. A. N. Mitchell (R. Fus.); Lieut.-Col. (A./Col.) W. G. S. Mitchell, D.S.O., M.C. (H.L.I.); Lieut. S. J. Moir (Aus. F.C.); Capt. H. H. de B. Monk, M.C. (K.R.R.C.); Maj. A. M. Morison (France); Capt. C. C. Morley; Lieut. F. W. Morter (R. War. K.); Capt. (A./Maj.) D. O. Mulholland (Conn. R.); Capt. M. D. Nares; Lieut. O. S. Neill; Capt. G. D. Nelson, D.S.C. (Vendome); Maj. C. H. Nicholas (S. Wales B.) (Egypt); Capt. J. Noakes, M.M.; Maj. M. W. Noel (L'pool. R.); Lieut. G. S. O'Brien (Canada); Lieut. H. D. O'Neill (R. Dub. Fus.); Capt. (A./Maj.) J. O. C. Orton, M.C. (Norf. R.); Lieut. (A./Capt.) G. S. D. M. Pape (France); Lieut. R. S. Park; Lieut. J. A. Paull (Can. Eng.); Capt. (A./Maj.) L. G. S. Payne, M.C. (Suff. R.); Lieut. (A./Capt.) A. G. Peace (Can. Inf.); Lieut. A. J. D. Peebles (Lond. R.); Lieut. F. B. Pelly (Adriatic); Lieut. M. W. Piercy; Lieut. (A./Capt.) C. Pilkington (Shrops. L.I.); Lieut.-Col. C. F. Pollock, O.B.E.; Lieut. S. H. Preston; Maj. E. R. Pretzman (Som. L.I.) (France); Lieut. F. H. Prime (Can. Inf.); Lieut.-Col. C. E. C. Rabagliati, M.C. (Yorks. L.I.) (France); Sec. Lieut. L. T. McK. L. Ray (Aust. F.C.); Lieut. A. D. Reid (Vendome); Capt. C. E. Rich; Capt. A. I. Riley (Artists R.); Capt. H. J. Roach; Lieut.-Col. R. M. Rodwell (W. Yorks); Lieut. A. D. Rogers; Lieut.-Col. R. P. Ross, D.S.O.; Lieut. (Hon. Capt.) H. B. Russell (R.F.A.); Lieut. W. L. Rutledge, M.M. (Can. Inf.); Lieut. (Hon. Capt.) D. C. W. Sanders (R.F.A.); Sec. Lieut. B. Scovell; Lieut. G. Sewell (Lincs. R.) (Egypt); Lieut. (A./Capt.) W. Sharpe (Gren. Gds.) (Egypt); Lieut. F. H. G. Shepard; Capt. W. A. Shir-



law (H.L.I., T.F.); Capt. (A./Maj.) A. M. Shook, D.S.O., D.S.C.; Lieut. F. D. J. Silwood; Capt. (A./Maj.) L. H. T. Sloan (Cam. Hdrs.); Lieut. C. G. H. Smith; Capt. R. M. Smith, M.C., D.F.C. (Aust. F.C.) (Egypt); Lieut. (A./Capt.) R. N. Smith; Capt. (A./Maj.) S. O. Smith; Capt. (A./Maj.) D. Stewart (R.G.A., T.F.); Capt. D. M. Stewart (Roy. Scots); Lieut. J. L. Stocks; Lieut. E. A. Sullock (L'pool R.); Lieut. J. H. R. Sutherland, M.B.E.; Capt. A. M. Swyny (R.I. Rif.); Lieut. (A./Capt.) R. K. Tailour (R.F.A.); Capt. W. M. Tait (Dur. L.I.); Lieut. L. Taylor; Capt. M. L. Taylor (R.E.) (France); Capt. G. Thom; Capt. M. Thomas (Welsh R.); Lieut. J. A. Thompson; Maj. (A./Lieut.-Col.) A. A. B. Thomson, M.C. (R. War. R.); Capt. D. R. Thurstan; Capt. A. M. Tidey; Maj. B. Travers; Lieut. C. T. Travers; Lieut. C. C. T. Turner; Lieut. (A./Capt.) L. M. V. Eysen; Lieut. H. A. Vineberg; Capt. (A./Maj.) L. J. Wackett, D.F.C. (Aust. F.C.); Capt. S. Walker (Aust. F.C.); Capt. W. H. de W. Waller; Maj. (A./Lieut.-Col.) R. B. Ward, Capt. W. K. F. G. Warnford; Maj. (Lieut.-Col.) H. E. M. Watkins; Capt. D. Watson (E. Yorks); Lieut. W. E. Watt (K.E. Horse); Lieut. H. S. White; Lieut. A. S. White; Lieut. (A./Capt.) A. A. B. Wilcock (R.W. Surr. R.); Lieut. S. Wilkinson; Lieut.-Col. (A./Co.) H. A. Williamson, C.M.G.; Lieut. C. E. Wilmot; Lieut. (H. and A./Capt.) G. H. B. Wilson, M.C. (R.A.S.C.) (Egypt); Capt. G. C. Wilson, M.C., D.C.M. (Aust. F.C.); Capt. T. E. Withington (O. and B.L.I.); Lieut. (A./Capt.) F. T. Woods (Northants R.); Lieut. (A./Capt.) F. St. J. Woodhard (E. Kent R.); Lieut. (A./Capt.) A. B. Wright (H.L.I.); Maj. A. C. Wright (Egypt); Lieut. F. Yorke-Smith.

NOTE.—Since the lists of names appearing in this Gazette were placed in the hands of the printers the "Acting Ranks" indicated have been relinquished in the great majority of cases.

Royal Red Cross.

1st Class.

Miss C. Cameron, O.A.I.M.N., Service (Reserve), Matron, R.A.F. Nursing Service, Matlock; Miss L. M. Holroyde, Matron, R.A.F. Aux. Hosp., Eaton Square, London.

Medal of British Empire Order (Military Division).

No. 20924 Member (1) Mrs. M. B. Brisley, Women's Royal Air Force, Upton, Chester. For gallant conduct and devotion to duty at Upton on Dec. 17, 1918, in extricating one of the occupants from a crashed aeroplane, and assisting to remove the second man from the wreckage.

Honorary Rank.

Granted the Hon. Rank of Capt. on retirement, in recognition of good service during the war.—Lieut. M. C. Caley. Lieut. A. D. MacDonald, D.F.C. (Can. Engrs.).

Bar to Distinguished Flying Medal.

223740 Sgt. Mec. J. Chapman, D.F.M. (Newcastle-on-Tyne) (France).

Distinguished Flying Medal.

86267 Sgt. E. Antcliffe (88th Sqdn.) (France); 233777 Sgt. Mec. A. H. Banks (I. Force) (France); 214412 Sgt. Mec. G. Betteridge (France); 223197 Sgt. Mec. W. S. Blyth (France); 23773 Sgt. W. Bonner (France); 217755 Sgt. (Obs.) M. C. Day (Flanders); 240137 Sgt. W. Greenwood (France); 402734 Sgt. Mec. J. Jones (I. Force) (France); 222304 Sgt. (Obs.) R. S. Joysey (Flanders); 109538 Sgt. P. A. McGuinness, No. 11 Sqdn. (France); 93272 Sgt. Mec. G. Packman (France); 187480 Sgt. Mec. C. W. Riseboro (Palestine); 402609 A.C.2 W. Roper (France); 91975 Sgt. Mec. L. H. Rowe (France); 10550 Sgt. N. Sandison (France); P/39365 Sgt. F. Sefton (88th Sqdn.) (France); 96639 Sgt. A. Shepherd (France); 7958 L.A.C. (A./Cpl.) C. R. C. Shortland (France); 10786 Sgt. A. H. Woolgar (France).

Air Force Medal.

201182 Ch. Mec. W. Angus (East Fortune); 205926 Cpl. Mec. W. J. Baker (Bristol); 232626 Sgt. (Obs.) H. A. M. Balls (Dunkirk); Aus. 275 Sgt. J. M. Bennett (Windsor, Victoria, N.S.W.); 215839 A.M.I (E.) A. Berry (Calshot); 201271 Sgt. Mec. J. Burrell (Lawthorne-Howden); 206005 Cpl. A. C. Chrisp (Calshot); 214875 Cpl. C. Davis (Longside); 315711 F./Sgt. H. S. Eltringham (Longside); 232635 A.M.2 S. J. A. Emery (Anglesey); 216420 Cpl. G. W. Ewbank (East Fortune); 222627 A.M.3 T. L. Griffiths (Anglesey); 201589 Cpl. Mec. W. J. Greatheador (Killingholme); 243541 A.M.I J. N. Forteach (Farnham, Surrey); R.N. 201593 Sgt. Mec. S. J. Heath (Ports-mouth); 167344 Sgt. A. C. Howarth (Seahouses); 205004 Cpl. C. F. Kidd (Longside); 212913 F./Sgt. G. Kidd (Seaton Carew); 313806 Sgt. C. H. Lewry (Longside); 313843 F.-Sgt. P. Norton (Longside); 313853 Ch. Mec. T. Parry (Peterhead); 238860 Ch. Mec. A. G. Poole (East Fortune); 208923 Cpl. R. Reekie (East Fortune); 229884 Sgt. Mec. F. Reynolds (East Fortune); Aus./8974 1st A./Mec. W. H. Shiers (Adelaide, South Australia); 95461 Sgt. Mec. C. N. Tabiner (Leeds) (I. Force, France); 206822 Sgt. J. R. Welsh (Hornsea); 218546 Ch. Mec. A. J. Woolhead (Killingholme).

Meritorious Service Medal.

5755 Ch. Mech. J. W. Airey (Salonika); 558 F./Sgt. A. G. Alcock (France); 201214 F./Sgt. R. E. Alford (Mediterranean); 87948 Sgt.-Maj. T. H. Alford (Mesopotamia); 69411 L.A.C. G. Anderson (France); 24436 F./Sgt. O. Anderson (France); 38382 A./C.I. B. Ashley (India); 17433 Ch. Mech. E. C. Aston (Salonika); 18937 Cpl. W. E. Baines (France); 6680 Sgt. W. J. Bains (I. Force, France); 205043 Ch. Mech. G. A. Ball (Flanders); 314099 F./Sgt. J. W. Barcroft (217th Sqdn., Dunkirk); 8741 Sgt. Clk. J. Barlow (Egypt); Aus. 266 Ch. Mech. J. H. Barnes (Egypt); 9409 F./Sgt. J. C. Bastabal (France); 4038 Ch. Mech. W. O. Bachelor (Egypt); 16089 Sgt. Clk. B. R. Bayliss (I. Force, France); 16860 Cpl. W. J. Beaumont (France); 94727 A.C. 1 W. J. Beckwith (France); Aus. 275 Sgt. Mech. J. M. Bennett (Egypt); 6116 Ch. Mech. W. Betts (Egypt); 19430 F./Clk. J. Bicknell (Egypt); 8715 A.C. 1 C. H. Bird (France); 313624 Mas. Mec. L. M. Bird (I. Force, France); 12450 F./Sgt. W. J. Bird (France); 21316 Cpl. Mech. F. T. Birkinshaw (Egypt); 240395 Cpl. Clk. S. E. Birt (I. Force, France); 249562 L.A.C. (A./Cpl.) W. A. Bishop (France); 18630 Ch. Mech. V. H. Blackman (France); 18372 F./Sgt. H. F. Bond (France); 13567 Cpl. (A./Sgt.) E. B. Boucher (France); 64716 L.A.C. (A./Cpl.) P. A. Bovey (France); 1161 Cpl. L. G. Bowler (France); 38148 Sgt. H. C. Bowley (France); 404072 A.M. 1 H. Bowyer (Egypt); 3910 Sgt. Mech. F. Bradshaw (Egypt); 15328 Cpl. Clk. F. Brindley (France); 201192 A.M. T. J. Brown (France); 11808 F./Sgt. J. H. Brown (France); 3277 F./Sgt. J. Bryson (France); 8438 F./Sgt. C. C. Burchett (France); 19755 A.C.1 R. H. Butler (France); 20338 Sgt. Mech. G. J. Bysouth (Dunkirk); 3804 Sgt.-Maj. J. F. Camfield (France); 7378 F./Sgt. W. Camm (France); 9679 F./Sgt. F. J. Carrington (France); 20131 Ch. Mech. L. G. Castle (Egypt); Aus. 281 Sgt. Mech. A. E. Chadwick (Egypt); 1695 Cpl. Mec. J. Charcroft (I. Force, France); 403066 Flt. Clk. W. Chewter (I. Force, France); 15318 Cpl. E. T. Clark (France); 108862 Cpl. H. Clark (I. Force, France); 8259 L.A.C. C. Cobden (France); 16320 Flt. Sgt. T. Collins (France); 659 Sgt. (A./F. Sgt.) C. H. Condon (France); 5386 A./Cpl. J. A. Cooper (France); 217248 Sgt. F. S. Cornish (France); 223100 F./Sgt. F. Couchman (Dunkirk); 51403 A.C.1 J. W. Coultas (France); 75913 A.M.3 S. Coulthurst (I. Force, France); 50879 Cpl. C. Cowden (France); 3068 Ch. Mec. A. Cox (Egypt); 713 Sgt.-Maj. S. C. Crawford (France); 3056 Ch. Mec. A. E. Crispin, D.S.M. (Mediterranean); 19604 L.A.C. V. Croad (France); 16177 Sgt. (A./F./Sgt.) A. W. Culver (France); 209494 Sgt. Mec. J. A. H. Culverwell (I. Force, France); 59048 Sgt. Mec. H. A. Curran (France); 1457 Cpl. Mec. H. W. Cutler (Mesopotamia); 3212 Ch. Mec. G. Darcy (Egypt);

13097 F./Sgt. E. A. Davey (France); 204755 F./Sgt. H. Dawson (France); 10766 F./Sgt. H. Deadman (France); 42471 A.C.1 A. E. Dennis (France); 13694 F./Sgt. J. Devonald (Italy); 266718 A.C.2 C. J. Dickenson (France); 403616 Ch. Mech. F. E. Dilley (Egypt); 19705 F./Sgt. R. Dolding (France); 6622 Cpl. (A./Sgt.) J. B. Donaldson (France); 3890 Sgt.-Maj. C. E. Downie (France); 17254 Cpl. (A./Sgt.) E. A. Downs (France); 16745 Sgt. E. A. Dyer (France); 3630 Ch. Mech. A. C. Eagers (Egypt); 1670 Ch. Mas. Mech. W. W. Earle (Egypt); 26648 L.A.C. H. C. Eaton (France); 34165 Sgt. Clk. J. Elliott (France); 8422 Sgt.-Maj. A. C. Emery (France); 200083 L.A.C. H. H. England (Dunkirk); 403749 Ch. Mech. C. E. Eveleigh (Egypt); 6939 Cpl. C. F. Eydin (France); 28241 L.A.C. B. Farrer (France); 5403 Sgt.-Maj. S. Farrow (France); 9092 F./Sgt. R. W. Feast (I. Force) (France); 15917 F./Sgt. (T./Sgt.-Maj.) B. W. Felton (France); 10589 F./Sgt. A. J. Fisher (France); 207423 F./Sgt. R. L. M. Foreman (France); 51185 Ch. Mec. J. Fortune (Egypt); 20988 Sgt. G. Foster (France); 134900 F./Sgt. G. C. Fowles (France); Warrant Officer E. A. Fox (Aust. F.C.) (France); 16096 A.M. 1 W. McK. Fraser (France); 33579 F./Sgt. A. G. Freshwater (France); 402976 L.A.C. (A./Cpl.) G. R. Friday (France); 14170 Ch. Mec. G. Gardiner (Mesopotamia); 30313 F./Sgt. C. Gibson (France); 12111 F./Sgt. J. H. Gill (Italy); 537 F./Sgt. J. Goldsmith (France); 4274 Ch. Mec. J. Grant (Egypt); 13565 L.A.C. R. W. Gregory (France); 28118 F./Sgt. S. Gregory (France); 402561 Cpl. (A./Sgt.) A. Griffith (France); 200782 F./Sgt. H. Haylin (France); 12117 Sgt. F. C. Hancock (France); 2731 Sgt.-Maj. E. Harbot (France); 25787 L.A.C. M. E. Hardy (France); 46031 Cpl. F. Harrison (France); 50672 Cpl. W. Hedley (I. Force) (France); 12749 Cpl. Mec. W. F. H. Helps (France); 5582 Flt. Sgt. J. R. Henderson (France); 5916 Flt. Sgt. F. Hern (France); 21092 Sgt. Clk. S. V. Hicks (Salonika); 1453 Sgt.-Maj. 1 H. R. Higgins (Mesopotamia); 313771 Flt.-Sgt. J. T. Hill (France); 19826 Flt. Sgt. T. M. Hill (France); 87884 A.M. 1 J. Hipwell (France); 2195 C.M.M. H. Hipwood (France); 7345 Sgt. L. T. Hiron (France); 9007 Sgt. B. Hear (France); 823 F.-Sgt. R. Hollingsworth (France); 849 Sgt. J. D. Holt (France); 29010 A./Cpl. Clk. A. W. Hood (France); 32180 L.A.C. H. Holyoake (France); 7042 Cpl. F. N. Hornby (France); 12238 Flt. Sgt. D. J. Horsburgh (France); 5596 F./Sgt. E. Hoskin (France); 403638 Sgt.-Mec. I. H. S. Hubbard (Egypt); Aus./12 A.M. K. L. Hudson (Aust. F. Corps) (Mesopotamia); 2511 Cpl. H. F. Humfrey (France); 12408 Flt. Sgt. S. F. Isaac (France); 13474 F./Sgt. W. Ivatts (Italy); 29222 Sgt. Mec. A. D. Jackson (Mesopotamia); 16778 F./Sgt. A. E. C. Jackson (France); 20874 Sgt. H. Jackson (France); 32525 Ch. Mec. W. T. James (Mesopotamia); 16060 L.A.C. F. Jefferys (France); 2130 F./Sgt. W. Jenkins (France); 40731 Cpl. A. Jenner (France); 5917 Sgt. F. J. Jenvey (France); 3996 Sgt. H. Jones (Paris); 29544 A.M. 2 J. Jones (France); 5652 F./Sgt. P. Jones (France); 61440 A.M. 1 W. J. Jones (Newhaven); 5658 Ch. Mec. W. Johns (Egypt); 30 S.M. 1 W. Jones (France); 34739 Cpl. G. Kelsey (France); 32557 Sgt. J. Kenyon (France); 407037 F.-Sgt. F. King (France); 28822 Sgt. T. Kingsbury (India); 565 Ch. Mec. J. J. Lake (Egypt); 403695 Ch. Mec. A. J. Lambert (Egypt); 21034 Cpl. C. H. Lane (France); 3491 F./Clk. W. Lansdowne (I. Force) (France); 44240 A./Cpl. H. L. Layton (France); 509 Flt. Sgt. C. E. Lee (France); 12129 Flt. Sgt. W. S. Lee (Italy); 37113 Sgt. (A./Flt. Sgt.) E. Levy (France); 45734 Sgt.-Maj. F. Lewis (France); 4272 Sgt. Mec. J. N. E. Lewis (Mesopotamia); 6868 Flt. Sgt. R. Lewis (France); 24227 Sgt. J. R. Longstaff (France); 64726 L.A.C. I. W. Maclure (France); 78635 Sgt.-Maj. N. McCormick (France); 18511 Flt. Sgt. D. McCutcheon (France); Mas. Clk. T. MacDonald (Hdqrs., 64th Naval Wing) (Mediterranean); 87995 Sgt.-Maj. I. R. Macfarlane (I. Force) (France); 33433 Ch. Mec. W. C. Mace (Egypt); 17283 Cpl. Mech. J. Mackay (I. Force) (France); 16249 Sgt. Mech. W. H. Mackenzie (France); 36440 Clk. 1 (A./Cpl. Clk.) A. March (Salonika); 3799 Sgt. T. McSwiney (France); 21623 A./Cpl. W. Margerison (France); 34334 Sgt.-Maj. J. Marshall (France); 175 Sgt.-Maj. C. E. Martin (France); 15360 Sgt. C. S. Mason (France); 38849 Sgt. T. Mason (France); 1028 Flt.-Sgt. A. Maxwell (France); 403202 Sgt.-Maj. W. R. Maxwell (France); 6132 Sgt.-Maj. L. A. May (France); 4736 Flt. Sgt. N. H. May (France); 9953 Flt. Sgt. A. J. Meredith (France); 59217 A.C.I. A. Metson (France); 1513 Flt. Sgt. H. Miller (India); 16812 Cpl. H. Miller (France); 6057 Flt. Sgt. G. Monery (France); 21270 Sgt.-Maj. J. R. Moore (France); 2216 S.M. 1 L. R. Moore (Paris); 403422 Sgt. Clk. A. E. G. Morgan (Egypt); 14571 Cpl. I. Morgan (France); 200429 Mas. Mec. T. Morris (France); 16949 Flt.-Sgt. J. A. Morton (France); 2161 F./Sgt. A. Mottershead (France); 23681 T. W. Murgatroyd (France); 9588 Sgt. Mec. C. Naylor (Egypt); 7305 L.A.C. C. B. R. Nelson (France); 10999 F./Sgt. W. Newall (France); 31401 F./Clk. J. Newcomb (Egypt); 16087 Sgt.-Maj. I. H. Newholm (France); 11685 Sgt.-Maj. II. F. C. Nicholson (France); 403436 Sgt. Clk. D. C. Oliver (Egypt); 2979 F./Sgt. C. Ollis (France); 203187 Sgt. A. C. Osborne (France); 212406 Ch. Mec. O. Otley (France); 10445 Sgt. A. G. Page (Italy); 59628 A.M.2 F. H. Parkes (France); 6333 A./Cpl. C. Parry (France); 135523 Clk. 1 D. Parry (I. Force) (France); 4206 F./Sgt. F. H. Patterson (France); 4216 Sgt.-Maj. W. H. Pearce (France); 38937 A.C.1 (A./Cpl.) A. W. Pegg (France); 253828 A.C.2 F. R. Pearce (X Balloon Sec.) (Egypt); 202174 Sgt.-Maj. II. A. Penfold (Vendome); 12030 Sgt. (A./F./Sgt.) J. A. Perfit (France); 31012 Ch. Mec. W. Perry (Mesopotamia); 7290 L.A.C. W. Peters (France); 19525 Sgt. A. S. Philipson (Italy); 202349 Cpl. Mec. R. W. Pierce (France); 3634 Sgt.-Maj. W. Plaine (France); 210222 Ch. Mec. H. Postill (Flanders); 37986 Sgt.-Mec. G. C. Powell (N. Russia); 202480 F./Sgt. G. H. Preece (France); 27021 L.A.C. C. Preston (France); 5877 F./Sgt. A. Puffrey (France); 203523 F./Sgt. W. C. Purslow (France); 31649 Sgt.-Maj. I. J. W. Ransom (France); 16324 F./Clk. W. R. Rayner (Egypt); 1975 L.A.C. (A./Sgt.) A. E. Reason (Herts) (France); 4008 F./Sgt. W. G. Reason (France); 17241 F./Sgt. W. Reddall (France); 26504 Sgt.-Mec. J. Redding (I. Force) (France); 29443 Ch. Mec. J. R. Reed (Egypt); 2365 Sgt. Mec. D. Rhind (Egypt); 4431 Sgt.-Maj. II. E. Rice (France); 7615 L.A.C. (A./Cpl.) W. G. Richards (France); 49897 F./Sgt. W. Richards (France); 47638 L.A.C. W. M. Richards (France); 22442 F./Sgt. W. H. Rickards (France); 5784 F./Sgt. J. P. Riding (France); 124661 Sgt. C. J. Roberts (France); 60402 Cpl. E. Roberts (France); 218808 Sgt.-Maj. T. Roberts (France); Aus./105 Ch. Mas. Mec. S. R. Robertson (Egypt); 3707 Sgt.-Maj. F. Robins (France); 8028 Sgt. E. Robinson (France); Aus/235 Cpl. Mec. G. D. Rogers (Egypt); Aus./124 F./Clk. J. H. Rogers (Egypt); 208162 A.M. 1/R. L. Rollings (Mediterranean); 633 F./Sgt. F. C. Root (France); 16097 F./Sgt. C. A. E. Rose (France); 15766 Sgt.-Maj. F. W. Rudolphe (France); 28316 Cpl. T. Rumsby (France); 4207 Sgt. P. C. Rumsey (France); 15935 F./Sgt. F. Russell (France); 20070 Sgt. H. R. Salmon (I. Force) (France); 202709 F./Sgt. H. R. Salmon (Mediterranean); 2279 Sgt.-Maj. I. J. Salmons (France); 24093 Sgt.-Maj. G. H. Savage (France); 24108 L.A.C. C. Sellar (France); 1184 F./Sgt. A. Scott (France); 20411 Sgt. (A./F./Sgt.) R. G. Sharrock (France); 40224 F. Clk. D. Shaw (Flanders); 107964 Cpl. Clk. P. R. Shaw (Cheshire) (Egypt); 3032 Ch. Mec. W. Shaw (Egypt); 25631 Cpl. H. S. Shears (France); 4506 Cpl. P. C. Shepherd (Paris); 216 S.M. 2 R. T. Short (India); 204110 Ch. Mec. F. Shrubshall (France); 2763 L.A.C. L. Sills (France); Aus./11 Cpl. (A./F./Sgt.) J. McK. Sloss, Aust. F. Corps (Mesopotamia); 57614 A./Sgt. A. W. Smith (Newhaven); 201594 Sgt.-Maj. A. Smith (France); 3187 Ch. Mas. Mec. P. Smyth (I. Force) (France); 31931 Sgt. Mec. H. Snook (Mesopotamia); 64760 L.A.C. H. Somper (France); 404034 Cpl. Mec. T. A. Sparye (Egypt); 29194 Cpl. H. Speck (Paris); 408782 F./Sgt. W. H. Stewart (Mesopotamia); 2048 Sgt.-Maj. F. Stone (France); 23712 F./Clk. W. E. Sullivan (Egypt); 22984 Cpl. Mec. D. G. Surridge (I. Force); 200082 Ch. Mec. G. W. Sutcliffe

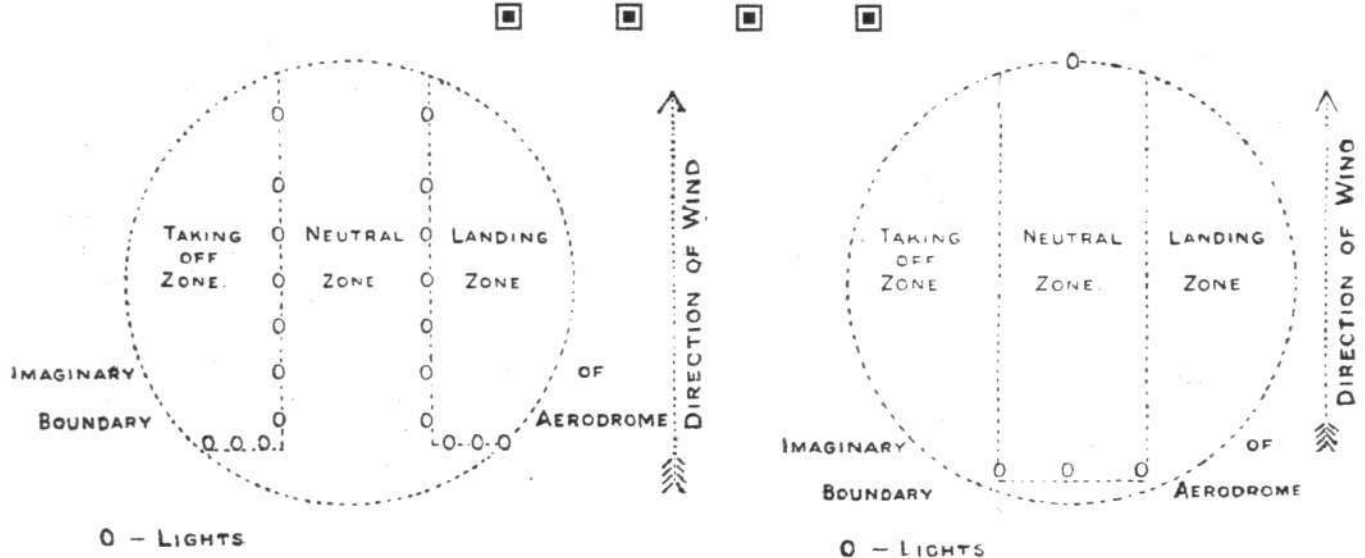
(I. Force) (France); 204885 Cpl. W. Swain (France); 19353 F./Clk. W. O. Talbot (Egypt); 5189 Ch. Mec. H. T. Tame (France); 18537 Cpl. J. Tannahill (France); 64084 F./Sgt. C. E. Tapper (France); 8223 Sgt. J. D. Tassel (France); 12268 F./Sgt. R. P. Taylor (France); 202261 Sgt. F. J. Terry (Flanders); 13343 Sgt.-Maj. W. Thaw (France); 6912 Sgt. W. A. Theobald (France); 2167 F./Sgt. J. B. Thomas (France); 13566 L.A.C. F. W. B. Thwaites (France); 19673 A.C. I S. A. Tickner (France); 34217 Sgt. Mec. C. Tingley (Egypt); 18203 Sgt. W. H. Tomison (France); 24568 F./Sgt. W. T. Tracey (France); 37784 F./Clk. A. C. W. Trotman (Mesopotamia); 10989 Cpl. (A./Sgt.) A. W. Trotter (France); 16676 L.A.C. N. Truckle (France); 6015 Mas. Mec. W. Turner (Egypt); 37362 Cpl. T. Venables (X. Balloon Sec.) (Egypt); 210174 Sgt. Mec. W. E. Veness (Flanders); 203427 Mas. Clk. G. Volk (I. Force) (France); 69605 Cpl. W. A. Voller (France); 64710 L.A.C. A. Walter (France); 214787 Clk. I A. T. Walker (Mediterranean); 14259 Ch. Mec. J. N. Walker (I. Force) (France); 9419 Pte. I G. A. Ward (France); 9441 Sgt. J. H. Warley (France); 203447 F./Sgt. C. E. Wash (Fishguard); 4132 Ch. Mec. J. W. Watmough (France); 32233 L.A.C. J. W. Watts (France); 48615 Cpl. A. B. Wells (France); 349 Sgt.-Maj. F. C. Whemham (France); 879 Sgt. F. C. White (France); 26718 Cpl. (A./Sgt.) P. A. White (France); 3787 Sgt.-Maj. C. Whitehead (France); 20907 Sgt.-Maj. A. Whitley (France); 9408 F./Sgt. A. Wigglesworth (France); 219709 Ch. Mec. R. Wilkinson (Mediterranean); 27840 Sgt. Mec. A. Williams (Egypt); 5806 Sgt. C. Williams (France); 6366 L.A.C. T. Williams (France); 4683 Sgt. Mec. T. Wilson (I. Force, France); 211219 Sgt. W. Wilson (Flanders); 11388 Cpl. Mec. R. Worsfold (France); 19925 F./Sgt. F. E. Wright (France); 17471 Cpl. Mec. J. T. Yelling (I. Force), (France); 3809 A.M. 3 (A./Cpl.) W. Youde (France); 3686 Mas. Mec. W. Young (France); 65932 Sgt.-Maj. I A. Zell (France).

Mentioned in Dispatches

The following officers and other ranks of the Royal Air Force have been mentioned in Dispatches and Reports received in the Air Ministry for valuable services rendered during the War:—

Capt. W. R. D. Acland (Coast Patrol); Lieut. K. F. Alford (Coast Patrol); Maj. J. W. K. Allsop (I. Force, France); Sec. Lieut. W. Anderson (Coast Patrol); Capt. J. W. J. Ashton (Vendome, Paris); Lieut. G. G. Baird (France); Lieut. M. R. Banks (Coast Patrol); Maj. the Hon. M. Baring, O.B.E. (I. Force); Sec. Lieut. (Hon. Lieut.) A. M. Barron, M.C. (France); Lieut. A. G. Bathurst-Norman (I. Force, France); Lieut. H. I. Bell (Lond. Y.) (I. Force, France); Maj. V. D. Bell, O.B.E. (France); Lieut. G. L. Bennet (India); Lieut. J. H. Bentham (Coast Patrol); Chaplain Rev. R. S. B. Berry (attd. I. Force, France); Capt. J. R. Blunt (Mediterranean); Lieut. W. A. Bouette (R. Welsh Fus.) (attd. Paris); Sec. Lieut. (Hon. Lieut.) W. E. Bottrill (Can. Forces) (I. Force, France); Lieut. Col. F. W. Bowhill, D.S.O. (Mediterranean); Lieut. (A./Capt.) A. W. Brittain, M.B.E. (France); Lieut. S. B. Bradley (I. Force, France); Lieut. R. P. Brailly (I. Force, France); Sec. Lieut. A. J. Brister (Coast Patrol); Sec. Lieut. C. W. Brown (I. Force, France); Lieut. G. H. Brown (I. Force, France); Lieut. W. H. Brown (Le Bourget); Maj. W. R. Bruce (India); Maj. C. E. Bryant, D.S.O. (France); Capt. the Rev. P. R. Butler, C.F. (I. Force, France); Capt. L. A. K. Butt (France); Sec. Lieut. D. E. Cameron (France); Maj. G. V. Carey (France); Lieut. T. J. Carroll (I. Force, France); Sec. Lieut. A. E. Case (I. Force, France); Sec. Lieut. (A./Capt.) L. J. Chandler (Coast Patrol); Lieut. O. W. Clapp (Egypt); Sec. Lieut. H. Clarke (Norf. Regt.) (Coast Patrol); Maj. S. M. Cleverley (I. Force, France); Lieut. (A./Capt.) E. McR. Cockell (I. Force, France); Sec. Lieut. S. F. Cole (Coast Patrol); Lieut. C. H. Cooper (Coast Patrol); Sec. Lieut. E. A. Copwell (Coast Patrol); Lieut. E. O. Cudmore (France); Lieut. the Hon. R. Cunliffe (Coast Patrol); Capt. R. E. H. Daniel (I. Force, France); Capt. S. L. Dashwood, M.B.E. (France); Sec. Lieut. D. W. Davies (Flanders); Sec. Lieut. G. J. Davies (Flanders); Capt. F. J. Dean (Coast Patrol); Capt. D. G. Donald (Coast Patrol); Capt. C. N. Downes (Coast Patrol); Sec. Lieut. F. T. Eades (Coast Patrol); Lieut. H. Edge (France); Lieut. G. H. Elliot (Coast Patrol); Lieut. W. C. England (Mediterranean); Maj. (H./Lieut.-Col.) F. H. L. Errington, C.B. (I. Force, France); Lieut. M. E. Faithfull (Coast Patrol); Lieut. F. Fenwick (Coast Patrol); Sec. Lieut. (A./Capt.) D. G. Fleming (Coast Patrol); Lieut. (A./Capt.) R. M. Foster, D.F.C. (France); Capt. F. M. Fox (Coast Patrol); Sec. Lieut. J. W. Fry (I. Force, France); Sec. Lieut. D. J. Fryer (France); Sec. Lieut. D. B. C. Fulton (Ægean); Capt. H. Gardiner-Hill, R.A.M.C. (I. Force, France); Lieut. F. F. Garraway (Coast Patrol); Lieut. F. A. D. Gauntlett (Coast Patrol); Lieut. (A./Capt.) J. S. Giffard (France); Lieut. H. H. Gillingham (A.S.C., M.T.) (Coast Patrol); Sec. Lieut. D. C. Girardot (Coast Patrol); Lieut. (A./Capt.) J. McG. Glen, M.C. (R. Scots) (Egypt); Lieut. B. W. Godfrey (Flanders); Sec. Lieut. P. Goldschmidt, M.B.E. (French Army, attd. R.A.F.) (Paris); Capt. (A./Maj.) A. Goodfellow (Coast Patrol); Lieut. V. D. Grant (Coast Patrol); Sec. Lieut. C. S. Gray (Ægean); Capt. (A./Maj.)

B. E. P. Gregg, D.S.C. (Yorks. R.) (Flanders); Lieut. C. S. W. Hall (Coast Patrol); Capt. D. S. W. Hambly (Midd'x. V.R.C.) (Flanders); Lieut. M. N. Hancocks (Flanders); Lieut. F. L. Harding (France); Lieut. J. K. Hardy (Mediterranean); Lieut. G. R. Hake (Vendome, Paris); Capt. S. S. Hatfield (Coast Patrol); Lieut. N. B. Harris, M.M. (I. Force, France); Lieut. (A./Capt.) A. A. N. Haywood (Coast Patrol); Maj. J. D. Henry, D.S.O. (Aust. Engrs.) (Egypt); Lieut. B. A. Hewett (Flanders); Maj. E. J. Hodson (Mediterranean); Sec. Lieut. G. F. Holford (I. Force, France); Maj. P. L. Holmes, D.S.C. (Mediterranean); Lieut. R. E. Horton (deceased) (Coast Patrol); Capt. J. F. Horsey (Coast Patrol); Lieut. (A./Maj.) P. C. Hoyland, M.B.E. (France); Lieut. C. E. Hughes (Som. L.I.) (Mediterranean); Lieut.-Col. (A./Col.) R. C. S. Hunt (Coast Patrol); Lieut. P. H. Hunter (Coast Patrol); Lieut. (A./Capt.) F. Hyde, M.C. (Coast Patrol); Capt. L. E. Innes-Baillie (R.M.L.I.) (Paris); Capt. R. Jarman, D.S.C. (Coast Patrol); Sec. Lieut. G. M. Jeffrey (France); Sec. Lieut. (A./Capt.) J. W. Jean, D.S.M. (I. Force, France); Lieut. C. H. Jenkinson (France); Maj. E. H. Johnston, O.B.E. (France); Lieut. (A./Capt.) H. G. Jones (Egypt); Lieut. V. Kennedy (I. Force, France); Sec. Lieut. C. F. King (France); Sec. Lieut. A. J. Kurn (Coast Patrol); Lieut. C. W. Lambert (Coast Patrol); Sec. Lieut. (A./Lieut.) G. Lansdowne (Coast Patrol); Maj. (Hon. Col.) Sir W. R. Lawrence, Bt., G.C.I.E., G.C.V.O., C.B. (I. Force, France); Capt. O. C. Le Boutillier (Flanders); Sec. Lieut. (A./Lt.) W. J. Ley (I. Force, France); Lieut. (A./Capt.) A. Lindley (I. Force, France); Maj. F. J. Linnell (Coast Patrol); Maj. T. V. Lister (Coast Patrol); Lieut. J. Lorimer (Can. Inf.) (I. Force, France); Capt. J. L. Luntley (I. Force, France); Sec. Lieut. J. B. Lynch (Ægean); Capt. (A./Maj.) M. Lyon (Mediterranean); Sec. Lieut. J. P. McClelland (France); Sec. Lieut. A. K. McGill (Coast Patrol); Lieut. (A./Capt.) J. McLaren (S. A. Inf.) (Coast Patrol); Capt. T. D. McLeish (Mediterranean); Sec. Lieut. W. A. McLeod (Coast Patrol); Maj. C. S. MacNab (I. Force, France); Sec. Lieut. H. L. Marshall (Coast Patrol); Lieut. W. H. Martin (France); Col. (A./Bt.-Genl.) E. A. D. Masterman, C.B.E., A.F.C. (Coast Patrol); Lieut. (A./Capt.) W. J. Matthews (Tank Corps) (Coast Patrol); Capt. T. G. Mellanby (France); Sec. Lieut. W. Mellor (I. Force, France); Lieut. (A./Capt.) E. Meynell, D.C.M. (Mediterranean); Maj. J. S. Mills, D.S.C. (Coast Patrol); Sec. Lieut. H. Nelson (I. Force, France); Sec. Lieut. H. W. Nicholl (I. Force, France); Lieut. L. Nicholson, M.M. (R.E. and M.G.C.) (Coast Patrol); Lieut. R. A. Nicholson (Coast Patrol); Sec. Lieut. F. O'Donnell (I. Force, France); Sec. Lieut. G. T. H. Pack (I. Force, France); Lieut. J. Parke, D.F.C. (I. Force, France); Lt. F. Pascoe (Welsh R.) (I. Force, France); Sec. Lieut. A. V. Pepperell (I. Force, France); Lieut. W. H. D. Phillips (France); Capt. J. W. Pinder, D.F.C. (I. Force, France); Lieut. H. W. Piper (France); Lieut. (A./Capt.) N. P. Playford (Vendome, Paris); Sec. Lieut. F. Polley (I. Force, France); Capt. O. I. Preston, M.C. (France); Capt. E. R. Pritchard (Coast Patrol); Sec. Lieut. D. C. Prodder (Coast Patrol); Lieut. W. J. Pullen (H.A.C.) (Flanders); Lieut. F. G. Pym (France); Lieut. C. J. Ramsbottom (France); Capt. V. H. Ramsden (Coast Patrol); Capt. E. B. A. Rayner (I. Force, France); Capt. W. E. Reason (I. Force, France); Sec. Lieut. A. G. V. Reeves (Coast Patrol); Lieut. H. Riches (France); Lieut.-Col. C. E. Risk (R.M.L.I.) (Mediterranean); Lieut. (A./Capt.) E. L. Roberts (France); Lieut. F. C. Robinson (Coast Patrol); Capt. L. H. Rochford, D.S.C., D.F.C. (France); Lieut. V. F. A. Rolandi (Coast Patrol); Sec. Lieut. J. W. Rose, D.S.M. (Mediterranean); Capt. J. Rothwell (Med. Service) (Coastal Service); Maj. F. T. Ryan, M.C. (R.A.) (France); Lieut. E. H. F. Scott (Coast Patrol); Lieut. G. T. Scott (Can. E.F.) (Coast Patrol); Lieut. (A./Capt.) J. C. B. P. Seaver, I. Force, France); Capt. A. T. Skethley (Coast Patrol); Lieut. J. A. Smale (Coast Patrol); Lieut. C. T. Smith (France); Maj. (A./Lieut.-Col.) S. Smith, D.S.O., A.F.C. (France); Maj. T. V. Smith, M.C., I. Force (France); Lieut. W. Smith, 29th Group (Coast Patrol); Capt. (A./Maj.) T. R. Spence (Mediterranean); Sec. Lieut. C. H. B. Stevenson (I. Force, France); Capt. R. Millar, Stirling (Coast Patrol); Capt. C. H. Stokes, D.F.C. (France); Lieut. (A./Capt.) W. P. Suttle (I. Force, France); Lieut. H. L. Tamplin (Coast Patrol); Lieut. N. T. Thorneloe (Coast Patrol); Sec. Lieut. (Hon. Lieut.) S. E. Towill (Yorks. Hors.), (I. Force, France); Capt. (A./Maj.) H. A. Treadgold, M.D. (R.A.M.C.) (Orkneys); Lieut. G. E. Tugwell (Coast Patrol); Maj. (A./Lieut.-Col.) L. Tomkinson (Coast Patrol); Sec. Lieut. A. Tytler (France); Sec. Lieut. (A./Lieut.) J. E. Tyrrell (Egypt); Sec. Lieut. H. J. Usher (Coast Patrol); Capt. W. W. Wakefield (Coast Patrol); Sec. Lieut. W. Wallace (France); Lieut. J. E. Watkins (Adriatic); Lieut. (A./Capt.) G. R. Westmacott, D.S.O. (G. Gds.), (I. Force, France); Sec. Lieut. (A./Lt.) W. Wheatley (Coast Patrol); Lieut. S. R. Winkworth (I. Force, France); Lieut. (A./Capt.) H. Wing (Egypt); Maj. T. W. Winter (I. Force, France); Lieut. N. H. Witter (Flanders); Capt. T. O. Wood (France); Lieut. W. B. Woodland (Coast Patrol); Lieut. C. F. R. Woolnough (Coast Patrol); Lieut. O. E. Worsley (Mediterranean); Lieut. E. C. B. Wright (Coast Patrol).



NIGHT LANDING ON AERODROMES.—Important corrections in the sketches published in the *London Gazette* on April 30, and reproduced in *FLIGHT* on May 8, to illustrate the official rules governing night landings on licensed aerodromes, are announced. They are indicated in revised sketches published in the *Gazette* of June 6, and reproduced above. In the former sketches the segment to the left of the neutral zone was described in each case as the landing zone, and that to the right as the taking-off zone. These descriptions are reversed in the corrected sketches, the taking-off zone being to the left and the landing-zone to the right

THE ROYAL AIR FORCE

London Gazette, May 30

The following temporary appointments are made:—
Staff Officers, 1st Class (P).—Lieut.-Col. I. T. Courtney, Lieut.-Col. K. G. Brooke, from (Director); May 1.
Staff Officers, 2nd Class (Air).—Lieut.-Col. E. L. Gossage, M.C., Capt. R. B. Maycock, O.B.E., Maj. O. G. G. Villiers, D.S.O. (P.).—Maj. A. H. S. Steele-Perkins, O.B.E., from S.O., 1st Class; May 1.
Staff Officers, 3rd Class (Air).—Capt. E. O'D. Crean, Lieut. A. Rowan, Lieut. R. Gambier-Parry. (P.).—Capt. C. G. Murray; May 1.
Staff Officers, 4th Class (P).—Lieut. A. W. Symington, M.C., Lieut. E. N. T. Edwardes; May 1.
Staff Officer, 2nd Class (P).—Maj. R. Hilton-Jones, O.B.E.; May 23.
Administrative.—Capt. E. H. T. Atkinson to be actg. Maj. whilst so employed, from April 19, 1918, to May 31.
Staff Officers, 3rd Class (Q).—Lieut. T. T. Pickup, and to be actg. Capt. whilst so employed till April 30, vice Capt. H. R. Radford; April 24. (T.).—Sec. Lieut. H. F. Webb, and to be actg. Capt. from Feb. 18 to April 30.

Flying Branch

Maj. J. C. P. Wood to be Maj. (A. and S.), from Unemployed List; May 6, seniority April 1, 1918, next below B. Travers.
 Capt. (actg. Maj.) T. F. N. Gerrard, D.S.C., to be Capt. (A. and S.), and relinquishes the actg. rank of Maj.; April 22.

Sec. Lieut. V. O. Hillyard to be Lieut.; June 25, 1918.
 The following relinquish their comms. on ceasing to be employed:—
 Sec. Lieut. (Hon. Lieut.) L. A. Naylor (Lieut., Nova Scotia R.); Dec. 29, 1918. Lieut. (actg. Capt.) D. J. Nickle (Capt., Can. Forestry C.); Jan. 12. Lieut. J. Grimshaw (Lieut., Manitoba R.); Jan. 30. Sec. Lieut. R. M. Close (Sec. Lieut., Notts. and Derby R.); Feb. 3. Sec. Lieut. (Hon. Capt.) W. G. Shedel (Lieut., R. Fusiliers); Feb. 27. Lieut. A. B. Raymond (Capt., Can. A.S.C.); March 5. Sec. Lieut. (Hon. Lieut.) E. A. Johnson (Lieut., C. Ontario R.); March 9. Lieut. C. C. R. Millington (Sec. Lieut., R.G.A.); March 21. Sec. Lieut. (Hon. Lieut.) T. J. D. Reid (Lieut., L. and B. Horse Yeo.); April 1. Lieut. H. D'A. McGrath (Lieut., B. Col. R.); April 10. Sec. Lieut. (Hon. Lieut.) L. C. Herne (Lieut., B. Col. R.); April 16. Sec. Lieut. (Hon. Lieut.) E. C. Clegg, M.C. (Lieut., Wilt. R.); May 5. Lieut. C. E. Rendall (Lieut., R.F.A.); May 6. Lieut. W. A. Ross (Lieut., Sask. R.); May 8. Sec. Lieut. A. G. L. Sidwell (Lieut., R. Dub. Fus.); May 11. Lieut. H. B. Morkill (Lieut., Yorks. R.); May 15. Lieut. A. G. Lough (Lieut., Cent. Ont. R.); May 16. Lieut. L. A. Newbold (Lieut., Essex R.); May 22. Maj. G. D. Hill (Capt., Hussars); May 26.

(Then follow the names of 215 officers who are transfd. to the Unemployed List under various dates. We regret that owing to great pressure on our space, it is impossible to reprint this portion of the List.—Ed.)

Lieut. (actg. Capt.) H. E. Winter relinquishes his commn. on account of ill-health, and is permitted to retain the rank of Capt.; May 21.
 The following Lieuts. relinquish their comms. on account of ill-health, and are permitted to retain their rank:—C. Packham; May 14. J. F. Drake, D.F.C., E. N. A. Remington, R. F. Round; May 20. I. H. McClure (caused by wounds); May 21.

Lieut. J. R. MacMillan (Sask. R.) relinquishes his commn. on account of ill-health; April 9.

Lieut. H. J. Leavitt resigns his commn.; May 31.
 The following Sec. Lieuts. relinquish their comms. on account of ill-health, and are permitted to retain their rank:—G. J. Duncan, J. W. Marshall (contracted on active service), H. B. Mills; May 20.

R. W. Rollinson (contracted on active service); May 21.
 Sec. Lieut. A. Graham to take rank and precedence as if his appointment as Sec. Lieut. bore date Aug. 22, 1918.

Sec. Lieut. W. Smith (commnd. March 14, 1918) is cashiered by sentence of a General Court-Martial; March 12.

Sec. Lieut. G. J. N. Norman is dismissed the Service by sentence of a General Court-Martial; April 14.

The rank of Lieut. J. M. Bacon is as now described, and not as stated in *Gazette* of April 1.

The initials of Lieut. C. H. Clifford are as now described, and not G. H., as stated in *Gazette* of May 2.

The surname of Lieut.-Col. G. C. St. P. De Dombasie is as now described, and not as stated in *Gazette* of May 16.

The initials of Lieut. C. S. L. Coulson, D.F.C., are as now described, and not as stated in *Gazette* of April 15.

The notification in *Gazette* of March 18 concerning Lieut. E. T. Collins is cancelled.

The notification in *Gazette* of March 25, concerning Sec. Lieut. A. J. Jones is cancelled.

The notification in *Gazette* of April 1 concerning Lieut. B. N. Willis is cancelled.

The notification in *Gazette* of April 4 concerning Sec. Lieut. N. V. Scott (S. Staffs. R.) is cancelled.

The notification in *Gazette* of April 8 concerning Lieut. J. F. Drake is cancelled.

The notification in *Gazette* of April 25 concerning Sec. Lieut. W. G. Roberts is cancelled.

The notification in *Gazette* of April 29 concerning Lieut. R. A. Burnand, M.C., is cancelled.

Administrative Branch

H. C. Jones (Capt., Midd'x R.) is granted a temp. commn. as Capt.; Sept. 12, 1918, with seniority from April 1, 1918.

To be actg. Capts. whilst employed as Capts.:—Lieut. W. H. D. Phillips, from Feb. 27, to April 30; Sec. Lieut. E. U. Poyser, from March 1 to April 3.

Lieuts. to be graded for purposes of pay and allowances as Capts. whilst employed as Capts.:—J. M. J. C. J. I. Rock, W. H. D. Phillips; May 1.

Sec. Lieuts. to be graded for purposes of pay and allowances of Capts. whilst employed as Capts.:—H. Baker, E. G. Burden, E. Codyre, and to be Hon. Capt., J. N. Dillon, F. T. Dixon, W. A. Glasper, A. E. H. Hales, A. H. Hasler, R. W. Johnson, G. A. McMillan, and to be Hon. Lieut., J. H. Slingsby, G. E. L. Woodhouse, and to be Hon. Lieut.; May 1.

Sec. Lieut. L. Marquard to be graded for purposes of pay and allowances of Capt. whilst employed as Educational Officer; May 1.

Sec. Lieuts. to be graded for purposes of pay and allowances as Capts. whilst employed as P.T. Officers:—G. P. Abbott, A. J. Adams, S. D. Harrower, P. W. Smith, C. Wilson, and to be Hon. Lieut.; May 1.

Lieuts. (A.) to be Lieuts.:—N. S. Cameron, C. S. L. Coulson, D.F.C., D. P. Farley, K. L. Mackenzie; April 17. G. F. Hunter, J. M. Johnson; May 6. F. W. Doherty; May 10. J. E. W. Sugden; May 12. L. Mortimore; May 13.

Lieuts. (O.) to be Lieuts.:—C. Flavell; April 17. F. J. R. Hammersley; May 7.

Sec. Lieuts. to be Lieuts.:—(Hon. Lieut.) E. L. Ridley; May 29. H. T. Joy; Feb. 28 (substituted for notification in the *Gazette* of April 25). L. M. Britten; April 23.

T. T. Coates (Capt. and Qr.-Mr., Spec. List) is granted a temp. commn. as Lieut.; April 1, 1918, and to be Hon. Capt.

Sec. Lieut. F. H. H. Twelvetree to be actg. Lieut. whilst employed as Lieut. from (T.), from Sept. 16, 1918, to April 30.

Sec. Lieuts. to be Sec. Lieuts., from (T.):—(Hon. Lieut.) J. F. Alexander; May 1, and to be graded for purposes of pay and allowances as Capt. whilst employed as Capt.:—A. T. Robson; May 13.

The following relinquish their comms. on ceasing to be employed:—Lieut. W. S. Hann (Lieut., R. Horse Gds.); Marcu 24. Lieut. (actg. Capt.) P. J. Gething, M.C. (Lieut., R. War. R.); May 20.

(Then follow the names of 44 officers who are transfd. to the Unemployed List under various dates.)

The notification in the *Gazette* of April 8 concerning Lieut. C. A. Howe is cancelled.

The notifications in the *Gazette* of May 2 concerning the undermentioned officers are cancelled:—Lieut. C. H. Clifford (page 5,511), Capt. (actg. Maj.) H. W. Morgan, Lieut. (actg. Capt.) B. Turner, Lieut. H. B. Turner.

Technical Branch

To be actg. Maj. while employed as Maj., Grade A:—Capt. W. H. Dolphin, from March 11 to April 30; Lieut. (actg. Capt.) F. Susans, from Nov. 26, 1918, to April 30.

Lieut. (actg. Capt.) B. Turner retains the actg. rank of Capt. whilst employed as Chemical Warfare and Explosives Expl. Officer from March 29 to April 30.

Sec. Lieut. (actg. Capt.) J. H. Lytle retains his actg. rank whilst employed as Capt., Grade (B) from (Ad), from Nov. 9, 1918, to April 30.

Lieut. C. F. Blunt to be actg. Capt. whilst employed as Capt., Grade (A.), from Dec. 17, 1918, to April 30.

Lieut. J. A. Atkinson to be actg. Capt. whilst employed as Capt., Grade (B), from June 1, 1918, to April 30.

Sec. Lieut. J. A. Atkinson to be actg. Capt. whilst employed as Capt., Grade (A), from Dec. 10, 1918, to April 30.

Sec. Lieut. J. A. F. Henderson to be actg. Capt. whilst employed as Capt., Grade (B), from (Ad.), from May 30, 1918, to April 30 (substituted for notification in the *Gazette* of Aug. 30, 1918).

Lieut. H. A. Adams to be Lieut., Grade (B), from (S.O.); May 12.

Sec. Lieuts. to be Lieuts.:—Hon. Capt. H. M. Eldridge, M.C., and to retain his hon. rank; Nov. 1, 1918 (substituted for notification in the *Gazette* of March 7). L. A. Owen; April 2.

A. Hunnings (Temp. Lieut., K.R.R.C.) is granted a temp. commn. as Sec. Lieut., Grade (A); April 1, 1918, and to be Hon. Lieut.

Lieut. E. H. Wilson (Lieut., Notts and Derby R.) relinquishes his commn. on ceasing to be employed; April 10.

(Then follow the names of 47 officers who are transfd. to the Unemployed List under various dates.)

Maj. H. R. Vagg to take rank and precedence as if appointment as Maj. bore date Feb. 5.

The rank of Lieut. M. G. Fountain is as now described, and not Sec. Lieut. as stated in *Gazette* of April 25.

The notification in *Gazette* of Jan. 28 concerning Sec. Lieut. R. Wylie is cancelled.

The notifications in the *Gazette* of Feb. 11 concerning the undermentioned officers are cancelled:—Lieut. J. A. Atkinson, Sec. Lieut. J. A. Atkinson.

The notification in the *Gazette* of March 4 concerning Sec. Lieut. G. Colbert is cancelled.

The notification in the *Gazette* of April 11 concerning Lieut. W. E. Phillips is cancelled.

Medical Branch

Transferred to the Unemployed List:—Capt. W. B. Dove; Feb. 21. Capt. C. C. Fitzgerald, M.C. (R.A.M.C.); April 2.

Memoranda

The following are granted the actg. rank stated against their names, with effect from May 1. (Substituted for notification in the *Gazette* of May 27):—

To be Actg. Cols.:—Lieut.-Col. A. D. Cunningham, while employed in the Airships Department, Admiralty; Lieut.-Col. B. H. O. Armstrong, C.M.G., while employed as Director of Inland Works; Lieut.-Col. T. D. Mackie, C.M.G., O.B.E., while employed as Director of Air Construction Service.

Sec. Lieut. (Hon. Lieut.) T. Sutherland is granted the hon. rank of Capt.; Oct. 20, 1918.

(Then follow the names of 116 Cadets who are granted hon. comms. as Sec. Lieuts.)

Col. (actg. Brig.-Genl.) F. L. Festing, C.M.G., relinquishes his commn. on ceasing to be employed, and is permitted to retain the rank of Brig.-Genl.; June 1.

Transferred to the Unemployed List:—Lieut. C. S. Downey (R.A.O.C.), from (S.O.); March 28. Maj. (actg. Lieut.-Col.) M. Freeman, O.B.E. (Worc. R.), from (S.O.); May 1. Lieut. (actg. Maj.) H. Atkins, from (S.O.); May 14. Sec. Lieut. (actg. Capt.) E. E. Page from (S.O.); May 16.

The notification in *Gazette* May 13 concerning Capt. C. W. C. Browne is cancelled.

The notification in *Gazette* May 16 concerning Lieut.-Col. (actg. Brig.-Genl.) C. L. N. Newall, C.M.G., A.M., is cancelled.

London Gazette, June 3

The following temporary appointments are made at the Air Ministry:—

Staff Officers, 1st Class.—Lieut.-Col. T. E. St. C. Daniell, O.B.E., M.C. (T.), Maj. G. Laing, O.B.E. (T.), Maj. J. H. Hills, O.B.E. (D.), Maj. A. L. C. Neame (Q.), Capt. H. Cumming, O.B.E. (T.), Capt. L. P. Ball, O.B.E. (Q.), Capt. R. W. Thomas (Q.); May 1.

Staff Officers, 2nd Class.—Maj. P. C. A. Bridgeman (T.), Maj. O. H. Powell (T.), Capt. D. W. Wilson (T.), Capt. R. G. Lord, St. Oswald (Q.), Capt. W. H. G. Maton, M.B.E. (Q.), Capt. C. Mason (Q.), Lieut. G. W. Longstaff (T), Sec. Lieut. F. A. Holmes (Q.); May 1. Capt. L. Auken, O.B.E. (Q.); May 14.

Staff Officers, 3rd Class.—Capt. C. Rayner (T.), Capt. T. G. Skeates (T.), Capt. W. Burkinshaw (T.), Capt. H. L. Crichton (T.), Capt. N. R. Fuller (T.), Capt. F. D. Newbury (T.), Lieut. (Hon. Capt.) H. W. Clarke (Q.), Lieut. H. F. Walker (T.), Lieut. F. E. Holey (T.), Lieut. C. H. Masters (T.), Lieut. H. P. Bridges (Q.), Lieut. H. J. Birtles (Q.), Sec. Lieut. (Hon. Capt.) D. R. Thomas (Q.), Sec. Lieut. (Hon. Lieut.) W. E. Harper, M.C. (T.), Sec. Lieut. (Hon. Lieut.) T. H. Evans (T.), Sec. Lieut. A. K. Murray (Q.), Sec. Lieut. E. L. Ridley (Q.), Sec. Lieut. A. T. Cooper (Q.), Sec. Lieut. W. J. Bray (Q.), Sec. Lieut. T. H. Sills (Q.), Sec. Lieut. A. J. Somers (Q.), Sec. Lieut. B. F. Browne (Q.), May 1.

Staff Officers, 4th Class.—Lieut. A. H. Comfort (T.), Lieut. L. T. Sanderson (T.), Lieut. J. T. Vernon (T.), Sec. Lieut. C. H. Boreham (T.), Sec. Lieut.

C. Y. Mitchell (T.), Sec. Lieut. J. Hobbs (T.), Sec. Lieut. D. W. Dean (T) May 1.

The following temporary appointments are made:—
Staff Officer, 2nd Class (P.).—Maj. W. G. W. Prall; May 27.
Staff Officer, 3rd Class (P.).—Lieut. F. V. Goode; April 9, and to be actg. Capt. until April 30.

Flying Branch

Lieut.-Col. C. R. Finch-Noyes to be Lieut.-Col. (A. and S.), from (S.O.); March 5 (substituted for notification in *Gazette* May 9).

R. Williams, D.S.O. (Lieut.-Col., Australian Flying Corps), is granted a temp. supplemental commn. as Lieut.-Col. (A.); June 28, 1918 (substituted for notification in *Gazette*, April 8).

Capt. F. W. Hudson to be actg. Maj. while employed as Maj. (A.), from Dec. 30, 1908, to April 30.

Capt. O. R. Griffin to be graded for pay and allowances while employed as Capt. (A.), from Aug. 1, 1918, to April 30.

Lieut. G. E. Tugwell to be actg. Capt. while employed as Capt. (A. and S.) from Aug. 1, 1918, to April 30.

Lieut. H. D. Lewis to be actg. Capt. while employed as Capt. (K.B.), from May 31, 1918, to April 30.

Lieut. T. J. Gillow to be Lieut. (A.), from (Ad.); Jan. 20.

Sec. Lieut. V. Ross to be Lieut.; Sept. 6, 1918.

Sec. Lieut. H. W. F. Pennick (late Gen. List, R.F.C., on prob.) is confirmed in rank of Sec. Lieut. (A.); Dec. 30, 1918.

Sec. Lieut. S. C. Paice (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lieut. (A.); May 1 (since killed).

29702 Flt. Cdt. F. R. Atkinson is granted a temp. commn. as Sec. Lieut. (A.); Oct. 18, 1918.

The following relinquish their commns. on ceasing to be employed:—
 Sec. Lieut. (Hon. Lieut.) W. J. Kolosoff, M.M. (Lieut., B. Col. R.); Feb. 3.

Lieut. L. Holman (Lieut., Hussars); Feb. 14. Lieut. G. G. Edgell (Lt., Gen. List); Feb. 16. Sec. Lieut. (Hon. Lieut.) W. J. Jackson (Lieut., Rif. Bde.); Feb. 24. Capt. (actg. Maj.) P. A. Landry (Capt., B. Col. R.); Feb. 28.

Lieut. F. C. Aulagnier (Lieut., Essex R.); March 14. Lieut. R. H. Ley (Lieut., B. Col. R.); March 17. Lieut. (actg. Capt.) C. H. J. James (Capt., Can. M.G.C.); March 21. Lieut. H. L. Kennedy (Lieut., E. Ont. R.); March 31. Lieut. (Hon. Capt.) E. M. Ashton (Capt., Suff. R.); April 1.

Lieut. S. A. Villier (Lieut., R.F.A.); April 3. Sec. Lieut. (Hon. Lieut.) L. A. W. Knight (Lieut., Worc. R.); April 11. Sec. Lieut. (Hon. Lieut.) C. D. Moorhead (Lieut., Manchester R.); April 14. Lieut. (actg. Capt.) G. F. Armstrong (Capt., E. Ont. R.); April 24. Lieut. (actg. Maj.) L. Scott, D.C.M. (Capt., actg. Maj., E. Ont. R.); May 8. Lieut. (actg. Capt.) C. B. Cowley (Capt., E. Ont. R.); May 12. Lieut. B. Cockshott (Lieut., B. Col. R.); May 16. Sec. Lieut. (Hon. Lieut.) A. R. Cowan; May 19. Lieut. (Hon. Capt.) Sir R. T. Leighton (Capt., West and Cumblnd. Yeo.); May 27.

(Then follow the names of 225 officers who are transf'd. to the Unemployed List under various dates. We regret that owing to great pressure on our space it is impossible to reprint this portion of the List.—Ed.)

The following Lieuts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—B. G. Nicholson; April 24 (substituted for notification in the *Gazette* of Jan. 10). A. Crozier (contracted on active service); May 20. W. R. McCoo (caused by wounds); May 22.

The following Lieuts. relinquish their commns. on account of ill-health:—G. L. Barrett (caused by wounds); March 12 (substituted for notification in the *Gazette* of March 11). T. Nicholson (D.L.I.) (caused by wounds); June 1.

The following Sec. Lieuts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—A. K. Barter, D.F.C. (contracted on active service); H. Lawrence (caused by wounds); May 22.

Lieut. J. E. Ferrand to take rank and precedence as if his appointment as Lieut. bore date July 1, 1918.

Lieut. R. Kilpatrick to take rank and precedence as if his appointment as Lieut. bore date July 1, 1918.

The initials of Lieut. C. W. Turner are as now described, and not as stated in the *London Gazette* of Oct. 22, 1918.

The notification in the *Gazette* of Nov. 8, 1918, concerning Sec. Lieut. G. J. Gawthorne (K.B.), is cancelled.

The notifications in the *Gazette* of April 4 concerning the undermentioned officers are cancelled:—Sec. Lieut. G. A. King (page 4,419); Sec. Lieut. G. A. King (page 4,420); Lieut. S. R. Coward (page 4,423).

The notification in the *Gazette* of April 16 concerning Lieut. W. H. Gibson is cancelled.

The notification in the *Gazette* of April 29 concerning Lieut. M. A. Fisher-Brown is cancelled.

The notification in the *Gazette* of April 29 concerning Lieut. G. B. Dixon is cancelled.

The notification in the *Gazette* of May 9 concerning Sec. Lieut. C. L. Tench is cancelled (notification of May 23 to stand).

The notification in the *Gazette* of May 20 concerning Sec. Lieut. J. I. Duval is cancelled.

Administrative Branch

Capt. H. N. Walker, M.C., to be Capt., from (S.O.); May 1.

Lieut. H. R. Eycott-Martin, M.C., to be actg. Capt. whilst employed as Capt. (from Jan. 27 to April 30).

Lieuts. to be Lieuts., from (A.):—D. W. Paton; April 17 (substituted for the notification in the *Gazette* of April 29). A. L. Hitt; May 17.

Sec. Lieut. C. T. H. Page to be Lieut.; April 30.

Sec. Lieut. (Hon. Lieut.) J. D. C. Curtis, M.C., to be actg. Lieut. whilst employed as Lieut. (from April 1, 1918, to April 20).

Sec. Lieuts. to be Sec. Lieuts., from (A.):—M. A. Jordan, D. H. Edmiston; May 15. A. C. Porter, S. T. Crowe; May 20.

Sec. Lieut. A. D. Miller (late Gen. List, R.F.C., on prob.) is confirmed in his rank as Sec. Lieut.; Nov. 21, 1918.

H. Priestman (Maj., New Brunswick R.) is granted a temp. commn. as Sec. Lieut.; May 3, 1918, and to be Hon. Maj.

A. Ashby is granted a temp. commn. as Sec. Lieut.; May 19.

The following relinquish their commns. on ceasing to be employed:—
 Capt. F. K. Jones (Capt., Lond. R.); Feb. 16. Lieut. F. E. B. Duff

March 10. Lieut. (actg. Capt.) H. C. Griffith (Lieut., S. Wales Bord.); April 8. Lieut. (actg. Capt.) R. B. L. Perse (Lieut., Shropshire L.I.); April 16. Sec. Lieut. R. R. Orchard (Sec. Lieut., R. Welsh Fus.); April 20.

Sec. Lieut. (actg. Lieut.) J. McCarthy (Sec. Lieut., Cheshire R.); April 20; Sec. Lieut. (Hon. Capt.) J. Graham (Capt. and Qrmm., Scot. Rif.); May 12.

Lieut. J. W. J. Cheyney (commd. Shipwright, R.N.); May 18. Lieut.-Col. R. G. Talbot, C.B.E. (Lieut.-Comdr., R.N.); May 21.

(Then follow the names of 35 officers who are transf'd. to the Unemployed List under various dates.)

The following Capts. relinquish their commns. on account of ill-health:—
 G. Goodwin (Suffolk R.), G. R. Page (Capt., Lond. Yeo.) (caused by wounds); May 16.

The following Lieuts. relinquish their commns. on account of ill-health:—
 W. J. Wyatt (Devon R.) contracted on active service; May 20. G. Gilling (and retains his rank).

The following Sec. Lieuts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. T. Elliott; May 20.

Lieut. E. Walmsley; May 22.

The notification in the *Gazette* of Feb. 14 concerning Sec. Lieut. W. Twamley is cancelled.

The notification in the *Gazette* of March 28 concerning Sec. Lieut. C. Campbell is cancelled.

Technical Branch

Capt. E. I. David to be actg. Maj. whilst employed as Maj., Grade (A); June 6, 1918 (substituted for the notification in the *Gazette* of Nov. 15, 1918).

Capt. D. C. Waylen to be Capt., Grade (A), from (S.O.); April 23.

Lieut. W. L. Shaw to be actg. Capt. whilst employed as Capt., Grade (A), (from March 11 to April 30).

Lieut. G. Thomas to be graded for purposes of pay and allowances as Capt. while employed as Capt. (Grade A); May 1.

V. P. Turner (Lieut., Aus. Flying Corps) is granted a temp. supplementary commn. as Lieut., Grade (A); July 24, 1918 (substituted for notification in the *Gazette* of April 8).

Lieut. H. C. Bobbett to be Lieut., Grade (B), from (S.O.); May 1.

Sec. Lieut. W. Liniker to be actg. Lieut. whilst employed as Lieut. (Grade B); April 1, 1918, to April 30.

Sec. Lieut. L. G. Bullock to be Sec. Lieut., Grade (A), from (A), and to be actg. Lieut. whilst employed as Lieut., from Jan. 13 to April 30.

Sec. Lieut. J. W. Smith to be Sec. Lieut., Grade (A) from (Ad.); Feb. 18.

Sec. Lieut. E. A. Blundell to be Sec. Lieut., Grade (A), from (A'ships); June 29, 1918.

Sec. Lieut. L. F. E. Smith to be Sec. Lieut., Grade (A) from (K.B.); May 1.

Sec. Lieut. C. E. Tidy to be Sec. Lieut., Grade (B), from (A); April 29.

The following relinquish their commns. on ceasing to be employed:—Lieut. (Hon. Capt.) the Hon. E. H. J. Boscawen (Capt., Coldstream Gds.); June 29, 1918. Lieut. P. Irwin-Packington (Lieut., R.G.A.); March 14. Sec. Lieut. (Hon. Lieut.) W. E. Hughes (Lieut., Leic. R.); June 3.

(Then follow the names of 36 officers who are transf'd. to the Unemployed List under various dates.)

Sec. Lieut. C. W. Mayne relinquishes his commn. on account of ill-health, and is permitted to retain the rank of Lieut.; May 27.

The notification in *Gazette* of March 28 concerning Capt. P. J. Jones is cancelled.

The notification in *Gazette* of April 29 concerning Sec. Lieut. (Hon. Lieut.) R. W. V. Midland is cancelled.

Dental Branch

Lieut. R. S. H. Drabble is transf'd. to the Unemployed List; April 17.

Chaplains' Branch

The Rev. J. A. Chesterton is transferred to the Unemployed List; May 20.

Memoranda

Maj. J. D. K. Restler to be actg. Lieut.-Col. while employed as Chief Electrical Engineer in the Dept. of A.W.B.; May 1 (substituted for the notification in the *Gazette* of May 27).

E. G. Knox (Capt., Australian Flying Corps) is granted a temp. supplementary commn. as Capt., and to be actg. Maj. from Oct. 11, 1918, to April 30 (substituted for the notification in the *Gazette* of April 8).

The following relinquish their commns. on ceasing to be employed:—
 Maj. E. P. A. Melville, O.B.E., from (S.O.); April 1, and is granted the rank of Lieut.-Col.; Temp. Hon. Lieut. W. J. Duncan; April 16. Capt. O. W. Latimer; May 3.

(Then follow the names of four officers who were transf'd. to the Unemployed List on various dates.)

Col. (Lt.-Col. in Army) F. L. Festing, C.M.G., relinquishes his commn. on ceasing to be employed, and is granted the hon. rank of Brig.-Genl.; May 31 (substituted for the notification in the *Gazette* of May 30).

The notification in the *Gazette* of April 15 concerning Maj. (actg. Lieut.-Col.) E. P. A. Melville, O.B.E., is cancelled.

HONOURING TRANS-ATLANTIC FLYERS

ON June 5 at the House of Commons the officers of the three American flying boats were entertained at luncheon by Major-Gen. Seely, Under-Secretary for Air, and the company present to meet the officers included the Prince of Wales.

The United States officers present were:—Com. A. C. Read (N.C. 4), Com. Towers, Lieut.-Com. Bellingher (N.C. 1), Lieut.-Com. Richardson (N.C. 3), Lieut. Walter Hinton, Lieut. J. Breese, Lieut. E. F. Stone, and Lieut.-Com. D. W. C. Ramsey.

In the course of his speech Gen. Seely said that at the request of Mr. Churchill he was setting up a committee of flying men, aircraft constructors, and representatives of the Treasury to find out how best the dangers of flying can be minimised.

At the Air Ministry on June 9 Maj.-Gen. Seely, Under-Secretary for Air, on behalf of the King, decorated Com. Towers, the officer in command of the squadron of flying boats which started on the Transatlantic flight, and Com.

Read and the four officers of the N.C. 4 with the ribbon of the Air Force Cross.

The officers with Com. Read were Lieuts. Hinton, Stone, Rodd, and Breeze. Chief Mechanic Rhoads was also decorated with the Air Force Medal. Gen. Sir Hugh Trenchard, Chief of the Air Force, and Maj.-Gen. Swinton, Controller of Information, were also present.

In making the presentation Gen. Seely said that he had been especially charged by the King to perform the ceremony and to inform the airmen that his Majesty was extremely proud of the fact that they had accomplished the flight.

In decorating Chief Mechanic Rhoads, Gen. Seely said that the King had asked him to refer specially to him and congratulate him on the work which he had done.

President Wilson had given special permission for the officers to wear the decorations bestowed upon them.

AVIATION IN PARLIAMENT

R.A.F. Lighter-than-Air Service

Capt. W. BENN, in the House of Commons on June 2, asked the Under-Secretary of State to the Air Ministry whether he can make a statement about the future organisation of the lighter-than-air branch of the Air Service?

The Under-Secretary of State for Air (Maj.-Genl. Seely): Proposals to transfer the responsibility for airship construction from the Admiralty to the Air Ministry are now under discussion between the two Departments. I think it would be inadvisable to make any further announcement at present, but I will do so as soon as details have been arranged.

Contracts for Obsolescent Aircraft Finished

Lieut.-Col. MALONE asked the Under-Secretary of State to the Air Ministry whether he will state what contracts for obsolete or obsolescent aircraft remain uncancelled; and the date when it may be anticipated that these contracts will be concluded.

Mr. Kellaway: All contracts for obsolete and obsolescent aircraft are now concluded.

Tarrant Triplane

Capt. ORMSBY-GORE asked the Under-Secretary of State to the Air Ministry whether he will publish a Report on the causes and circumstances of the failure on trial of the Tarrant triplane at Farnborough, which resulted in the loss of the lives of two officers of the Air Force?

Maj.-Genl. Seely: The Tarrant triplane was built for military purposes to the order of the Government, and it would not be in the interest of the public service for the results of a technical investigation into the causes of the accident to be published.

General Sykes' Staff

Mr. RAFFER asked the Under-Secretary of State to the Air Ministry if he will state what is the total amount of money per annum being allocated for the payment of Genl. Sykes' staff; whether there are any restrictions as regards maximum salaries to be paid to his staff and, if so, what; and what are the exact terms under which the assistants in General Sykes' department are engaged so far as duration and termination of agreement are concerned?

Maj.-Genl. Seely: Proposals as to the staff required by Genl. Sykes for his department have been laid before the Treasury, and until the Treasury decision has been received I am unable to answer the questions raised.

The Smuggling of Dogs

Col. WESTON asked the Parliamentary Secretary to the Board of Agriculture whether any, and, if so, how many, cases of dogs imported illegally by troops and by aeroplanes have been brought to the notice of his Department during the last twelve months; and if he will state separately the number of dogs known to have been smuggled by ship and by aeroplane?

Sir A. Boscawen: There are 30 known cases of illegal landing by soldiers and sailors since June 1, 1918. The board have no proof of any case of illegal landing by means of an aeroplane.

R.A.F. Service Funerals

Lieut.-Col. MALONE, on June 3, asked the Under-Secretary of State to the Air Ministry whether officers, on transference from the Royal Naval Air Service to the Royal Air Force, lose their right to a Service funeral unless death is due to a flying accident; whether this is contrary to Air Force Memorandum No. 1, paragraphs 6 and 7, which provides that no financial loss should be incurred on transference; and whether he will have inquiries made in the case of Sec. Lieut. A. W. Benfield, who transferred from the Royal Naval Air Force to the Royal Air Force, died in hospital at Norwich last November, and whose funeral expenses are still unpaid owing to the refusal of the Air Ministry to allow the same and the fact that the next-of-kin are not in a financial position to meet the obligation?

Maj.-Genl. Seely: Officers of the Royal Air Force who die in this country are not entitled to a funeral at the public expense unless they are killed as the result of a flying accident. This rule applies equally to officers transferred from the Royal Naval Air Service as to those transferred from the Royal Flying Corps, and, as my hon. and gallant friend will appreciate, no discrimination could be made in this matter between the two classes. As regards the particular case of the late Sec. Lieut. Benfield, I shall be glad to consider whether an *ex gratia* allowance can be made towards the funeral expenses, if my hon. and gallant friend will furnish me with information as to the financial circumstances of the deceased officer's next of kin.

Auction Sales of Aeroplanes

Lieut.-Col. Sir S. HOARE asked the Parliamentary Secretary to the Minister of Munitions whether, in view of the high prices now being realised for obsolete and old motor cycles and cars being sold by Government Departments, it would be desirable to offer some of the new aeroplanes, now being broken up, to the public by auction sale so as to test the market on this matter?

Mr. Kellaway: No aeroplanes have been broken up by the Disposal Board except those which have been declared by the Air Ministry to be obsolete for Service use and unsuitable for civil aviation, and such machines as, by reason of their condition, could not be made safe for flying without unprofitable expenditure. The Disposal Board is offering aeroplanes and engines to the public by the various recognised methods of sale, including sale by auction. An auction sale was held at Hendon yesterday after having been widely advertised for the past two weeks.

Miss Douglas-Pennant

Sir R. THOMAS, on June 4, asked the Leader of the House whether the Government are now prepared, in view of what occurred in the other House last week, to agree to set up a Committee of Inquiry in respect of Miss Douglas-Pennant's dismissal?

Mr. Bonar Law: The Government have given most careful consideration to the opinion expressed by the House of Lords that a judicial inquiry should be held into the circumstances in which Miss Douglas-Pennant was removed from her appointment under the Air Ministry in August of last year. The Government see no sufficient reason for departing from the decision already taken by them. The responsibility of instituting such an inquiry must rest upon the Government. It would involve a large expenditure of public money, it would be contrary to the general principles of Departmental administration, and it would establish a very undesirable precedent, for if an inquiry were agreed to in regard to this lady, who has great personal influence, it would be difficult to justify the refusal to take a similar course in the case of many others who are not in an equally influential position. In these circumstances His Majesty's Government have decided that they cannot assume the responsibility of setting up this tribunal.

Aeroplanes (Gifts to Oversea Dominions)

Lieut.-Col. MOORE-BRABAZON on June 5 asked the Under-Secretary of State to the Air Ministry if he can now state how many surplus aeroplanes now in possession of the Air Ministry, and under what conditions, will be presented as a free gift to the Dominions, India, and the Crown Colonies?

Maj.-Genl. Seely: I am glad to say that His Majesty's Government have approved a proposal of the Air Council that a gift of aeroplanes should be made to each Dominion and to India, and that corresponding action should be taken in the case of any Colonial Government or Protectorate requiring machines. The object of His Majesty's Government is to assist the Dominions and India and the Colonies and Protectorates in the establishment of air forces, and thereby to develop the common defence of the Empire by air.

Lieut.-Col. Moore-Brabazon: Can the right hon. gentleman say if this will apply to any particular types of machines or to all types of machines now in use?

Maj.-Genl. Seely: We hope to be able to meet all the requests for free gifts on the part of the Dominions. It may be that in some cases they will ask for types of which we have none available, but we hope that will not occur and that we shall be able to meet all their requests.

Regent's Park

Sir WILLIAM PEARCE asked the Under-Secretary of State to the Air Ministry when the completion of the transfer of standard stocks from Regent's Park to Ruislip is completed in September will the buildings in Regent's Park be then removed and the land now occupied be restored to the public?

Maj.-Genl. Seely: I regret that I am unable to add anything on this question to the reply which I gave to my hon. friend on May 19. Perhaps he will address a question to the Parliamentary Secretary to the Ministry of Munitions at a later date.

Compensation for Damage by Aeroplanes

Sir PHILIP MAGNUS on June 6 asked the President of the Board of Trade whether he is considering the measures necessary to provide compensation for damage to private property or loss of life caused by any kind of aeroplane, whether in use for commercial, experimental or other objects?

Maj.-Genl. Seely: It is considered that, for the present, compensation for damage to private property or life should be dealt with by the ordinary law affecting damage to persons and property until further experience is gained. The question of compulsory insurance will be considered fully before the new Act is framed, to take effect from January 1, 1920.

Regent's Park

Sir W. PEARCE asked the Parliamentary Secretary to the Ministry of Munitions if he will remove the Air Ministry store building in Regent's Park immediately the standard stocks are transferred to Ruislip, and restore this open space for public use?

Mr. Kellaway: No store buildings in Regent's Park have so far been notified to the Disposal Board by the Air Ministry as being surplus to their requirements.



SIDE-WINDS

MR. R. L. DESOUTTER informs us that he has resigned from the position of manager at the British Caudron Co.'s Alcoa works as from the 24th ult., and that he is, therefore, free to consider any propositions from interested parties, either in the capacity of pilot or any other in which his long and varied experience of the aircraft industry could be utilised.

MESSRS. LEO RIPAUT and Co., of 1, King's Road, St. Pancras, London, N.W. 1, have now obtained from the printers their latest temporary retail descriptive list, illustrating the various types of plugs which they are in a position to deliver quickly, and would be glad to hear from any prospective enquirers desiring a copy. "Oleo Plugs" have a world-famous name for hard wear and reliability under the most strenuous conditions, and a long list of aviation and road records to their credit, including all pre-War *Daily Mail* prizes.

MR. ALBERT E. NEWTON, who has joined the board of directors of the British Motor Trading Corporation, Ltd., is leaving the Vacuum Oil Co., Ltd., after 26 years' service. He has hundreds of friends in the motor trade, and they will find him from now on at the offices of the British Motor Trading Corporation, at 22, King Street, St. James's, where he is taking a very active part in the management of the Corporation as distinct from having a seat on the board.

AFTER the fashion of one or two other leading firms hitherto engaged in aircraft production, the Air Navigation and Engineering Co., Ltd., of Addlestone, Surrey, are setting about the production of an extra-light four wheeler—of cycle-car purpose and weight, but distinctly unlike anything of the kind so far seen—which is to be known as the Bleriot Whippet. The chief feature of its design is that the whole of the belt-drive transmission is enclosed in a casing which extends along the middle line of the body interior—much in the manner of the centre-board case in a boat—as a continuation of air cowling over a two-cylinder 8 h.p. air-cooled V-type motor and the expanding-pulley-type change speed gear behind it. Thus in a very roomy cock-pit-like little body the driver sits on one side of the belt-drive casing, with the change speed lever within easy reach of his left hand, while his passenger sits on the other side, the seating being of the hammock-type.

The motor is to be an 8 h.p. Blackburn model of 85 mm. bore and 88 mm. stroke, with an outside flywheel and detachable cylinder heads, and will be fitted with a Thomson-Bennett magneto and automatic carburettor. The transmission will be from a three plate-dry clutch and silent chain to an expanding pulley on the counter shaft; thence by belt drive to a tubular back-axle with no differential. On the driver's right is a lever operating a mechanical starter; the brakes are internal expanding, lever controlled, on the

counter shaft, and a pedal controlled shoe-type brake on the rear axle belt rim. The experimental model is a good hill climber, but the forthcoming one for mass production promises to be better in all details, and to prove an exceedingly useful little runabout.

THE June number of *Mayfair* is a very remarkable production. Apart from its regular features it has a very fine aircraft supplement dealing with the many activities of the group of companies controlled by Mr. G. Holt Thomas. There are dozens of beautiful photographs showing practically every type of aircraft, airship, aeroplane and seaplane, which have been produced by the Aircraft Manufacturing Co. and its allied concerns during the War, and many views giving a few glimpses of the many works which were utilised to meet the great demand for Airco products. There are two "Spy" cartoons, Mr. G. Holt-Thomas and Gen. Brancker, and in each case Sir Leslie Ward has succeeded in giving us the best possible portrait. There are also portraits of Generals Sykes, Trenchard and Ashmore, Col. O'Gorman, Mr. Burroughes and Mr. Peck. Among the other articles in this number may be mentioned "The Future of British Sea Power," by Mr. Archibald Hurd; "The 'Plane and the Pen," by Gilbert Frankau; a cartoon of Mr. Justice Sankey by Mr. R. Jerrold-Nathan. Altogether the number is worth many times the two shillings charged for it.

THE Society of Motor Manufacturers and Traders has entered into an agreement with the Society of British Aircraft Constructors, one of the provisions of which is that Bond-signers shall be at liberty to exhibit aircraft goods at Aircraft Exhibitions approved by the S.B.A.C.

FOR the convenience of their London customers and clients in the South of England generally, Messrs. Richard Mather and Son, of Shoreham Street Works, Sheffield, have opened an office at 8, Well Court, Bow Lane, Cheapside, E.C. 4, where their friends can communicate urgent requirements, and receive prompt attention. They will ultimately carry a small stock of their varied productions in tools and cutlery, but in the meantime their London representative, Mr. T. E. Riley, will be glad to receive communications and deal immediately with urgent enquiries and orders at the London office, of which the telephone No. is Central 10898.

MESSRS. ARNOTT AND HARRISON, LTD., inform us that their works will be closed each week from 6 p.m. on Fridays to 7.45 a.m. on Mondays, commencing the week ending Friday, June 13. During these hours they will be unable to despatch or accept delivery of goods.

"THE Craft of the Propeller Maker" is the title of a beautiful album which has just been produced by Messrs. W. D. Oddy and Co., of Leeds. It consists of a series of full page photographs, printed in colours, illustrating the various stages of a built-up four-bladed propeller, and opposite each picture is reproduced a photograph showing the shop in which the particular stage of the process is carried out. Doubtless Messrs. W. D. Oddy and Co. will be pleased to send a copy of this charming book to any interested in the question of propeller making.

ALL who have had to do with the handling of large numbers of employees know how important it is that all clocks throughout the works should synchronise. Messrs. Gent and Co., of Faraday Works, Leicester, have given a great deal of study to this question, and a little booklet, "To Obtain 47 Efficient Hours," gives some details of their "start and cease work" sound signals and other time gadgets which make their Pulsynetic Impulse Clock system so eminently useful in modern manufacture. They will be pleased to send a copy of this booklet to any reader of *FLIGHT* who is interested in this subject.

COMMANDER BURLAMAQUI, who is visiting this country in the company of the President of Brazil, visited the works of the Aircraft Manufacturing Co. on June 5, and made a detailed inspection of the erecting, fitting, and other shops. Afterward he went down to the aerodrome, and was shown the Airco 9 and Airco 16 biplanes, which he inspected in detail.

THIS week all the chief West-End cinemas, including the West-End Cinema, will for the first time show a Pathé Frères film (taken by Mr. J. Andrews) of the manufacture of Triplex safety glass. All interested in this wonderful unsplinterable glass should make a point of going to see how it is made. A few weeks later it will be shown in most of the suburbs.

COMPANY MATTERS

Brown Brothers, Ltd.

THE report of Brown Brothers, Ltd., for the year ended December 18 last states that the profit, after making provision for excess profits duty and depreciation of leaseholds and fixtures, amounts to £42,473; £25,514 was brought forward, making £67,987. Deducting directors' fees, managing directors' remuneration and income-tax, £13,747, there is left £54,239, which the directors propose to appropriate as follows:—To payment of 6 per cent. dividend on cumulative preference shares to December 31 last, £6,000; to reserve fund, being 10 per cent. of net profits as per articles of association, £2,273; further amount to reserve fund (making same £90,000), £7,727; dividend of 7½ per cent. (2½ per cent. interim already paid), tax free, on ordinary shares, and bonus 2½ per cent., tax free, £15,000; and to carry forward £23,239.

NEW COMPANY REGISTERED

REGENT INSURANCE AND INVESTMENT CO., LTD.—Capital £20,000, in £1 shares. To carry on the business of marine, air and general insurance. Directors: F. G. Kerly and C. F. Karuth. Solicitors, Kerly, Sons and Karuth, 10 and 11, Austin Friars, E.C.

Aeronautical Specifications Published

Abbreviations:—cyl.=cylinder; I.C.=internal combustion; m.=motors.

APPLIED FOR IN 1917

The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

Published June 12, 1919

- 1,626. J. C. PORTE. Seaplane floats. (126,665.)
 1,627. J. C. PORTE. Flying-boat hulls. (126,666.)
 1,668. AIRCRAFT MANUFACTURING CO., G. DE HAVILLAND and J. S. CHAPMAN. Liquid fuel tanks. (126,669.)
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If you require anything pertaining to aviation, study "FLIGHT'S" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week (see pages li, lii, liii and liv)

NOTICE TO ADVERTISERS.

IN order that "FLIGHT" may continue to be published at the usual time, it is now necessary to close for Press earlier. All Advertisement Copy and Blocks must be delivered at the Offices of "FLIGHT," 36, Great Queen Street, Kingsway, W.C. 2, not later than 12 o'clock on Saturday in each week for the following week's issue.

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